Report 11384
January 1999

AMSU-A VERIFICATION TEST REPORT

METSAT PHASE LOCKED OSCILLATOR ASSEMBLY

TEST ITEM:
AMSU-A PHASE LOCKED OSCILLATOR ASSEMBLY
P/N 1348360-1
SERIAL NUMBERS F09, F10

PREPARED FOR

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
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Summary of Test Results for AMSU-A Phase Locked Oscillator Testing
Serial Numbers F09 and F10

Paragraph	Description	Requirements	F09	F10
3.2.1.1	Input Voltage and Current	600 mA max, +15V 100 mA max, -15V	522 mA for +15V, 64 mA for -15V	533 mA for +15V, 70 mA for -15V
3.2.1.2	Operating Temperature	+1°C to 44°C	-24°C to +60°C	0°C to 57°C
3.2.1.3	Start-up	All loads, +60°C and -30°C; in vacuum	Verified at +60 and -30°C, ambient	Verified at +60 and -30°C, ambient
3.2.1.4 & 3.2.1.5	Frequency Stability from 57.290344 GHz	±200 kHz	+0kHz, -33 kHz	+16 kHz, -0 kHz
3.2.1.6	RF Output Power	17 to 20 dBm	18.1 dBm	17.9 dBm
3.2.1.7	Output Power Stability	<1.5 dB	1.4 dB	1.5 dB
3.2.1.8	Load VSWR	2.01:1 or less	Verified	Verified
3.2.1.9	AM Noise	<-130 dBc/Hz @ 1 MHz	-145 dBc/Hz @ 1MHz	-140 dBc/Hz @ 1Mhz
3.2.1.10	FM Noise	<-100 dBc/Hz @ 1 MHz	-104 dBc/Hz @ 1 MHz	-105 dBc/Hz @ 1 MHz
3.2.1.11	Spurious and Sub-Harmonic Signals	<-90 dBc	< -90 dBc	< -90 dBc
3.2.1.12	Harmonics	<-30 dBc	-40 dBc	- 70 dBc
3.2.1.14	Warm-up Time	< 30 minutes	Verified	Verified
3.2.1.15	Grounding and Shielding		By Design	By Design
3.2.1.16	Input Voltage Protection		By Design	By Design
3.2.1.17	Reverse Polarity Protection		By Design	By Design
Environmental Testing				
Microphonics		AE-26633	TCXO Test	TCXO Test
Radiation Hardness		AE-26633	By Analysis	By Analysis
EMI/RFI		AE-26633	Not Required	Not Required
Vibration		AE-26633	Acceptance Level	Acceptance Level
Thermal Vacuum		AE-26633	Verified at Ambient Pressure Only	Verified at Ambient Pressure Only
Weight		2.0 lbs	2.0 lbs	2.0 lbs

1.0 SUMMARY

Two Flight Model AMSU-A Phase Locked Oscillators (P/N 1348360-1, S/N F09 and F10) have been tested per AES Test Procedure AE-26758 Rev. C, which includes full functional testing, vibration testing, thermal testing, and AM/FM Noise testing. Both assemblies satisfactorily passed all performance requirements of the AE-26633 Product Specification.

During the manufacture of PLO F09, the DRO CCA lid was rotated 180 degrees, which rendered the unit unable to lock. After removing the 10 fastening screws and installing the lid in the correct orientation, the unit functioned to all specifications. During the vibration of PLO F10, the dielectric puck of the DRO was dislodged from its bonded attachment to the CCA. The PLO and DRO were opened, the puck was re-attached, and the unit was restored to full operation. The MAI was enhanced to increase the reliability of the bonding.

2.0 REQUIREMENTS

The acceptance test procedure AE-26758C consists of tests designed to show compliance of the Phase Locked Oscillator with all requirements stated in the PLO Product Specification AE-26633. The tests reported herein demonstrate the acceptability of the AMSU-A PLO assemblies S/N's F09 and F10, and therefore compatibility with the AMSU-A Receiver Assembly.

3.0 RESULTS

The results of the required tests are presented in the following section as test data. As indicated on the test data sheets, all measured data passed all requirements associated with the product specification.

4.0 TEST DATA

A summary of the test data is provided at the start of each of the acceptance test sections. Furthermore, the raw data is reproduced as recorded, and is included in each section. The following table provides a concise summary of each unit's performance ability.

The remainder of this report contains the raw data taken during the tests of the two flight PLOs. The data is arranged by the following segmentation:

Section 1A: Initial Functional Testing - F09
1B: Initial Functional Testing - F10

Section 2A: Acceptance Level Vibration - F09
2B: Acceptance Level Vibration - F10

Section 3A: Frequency and Power Hysteresis - F09
3B: Frequency and Power Hysteresis - F10

Section 4A: EMI/RE02 Testing - F09 (not required)
4B: EMI/RE02 Testing - F10 (not required)

Section 5A: Final Functional Testing - F09
5B: Final Functional Testing - F10

Section 6A: AM/FM Noise Levels - F09
6B: AM/FM Noise Levels - F10

The remainder of this report contains the raw data taken during the tests of the two flight PLOs. The data is arranged by the following segmentation:

Section 1A: Initial Functional Testing - F09
1B: Initial Functional Testing - F10

Section 2A: Acceptance Level Vibration - F09
2B: Acceptance Level Vibration - F10

Section 3A: Frequency and Power Hysteresis - F09
3B: Frequency and Power Hysteresis - F10

Section 4A: EMI/RE02 Testing - F09 (not required)
4B: EMI/RE02 Testing - F10 (not required)

Section 5A: Final Functional Testing - F09
5B: Final Functional Testing - F10

Section 6A: AM/FM Noise Levels - F09
6B: AM/FM Noise Levels - F10

Section 1A: Initial Functional Testing - F09

This section contains the results of a full functional test over temperature taken before PLO F09 endured thermal cycling. All tests passed.

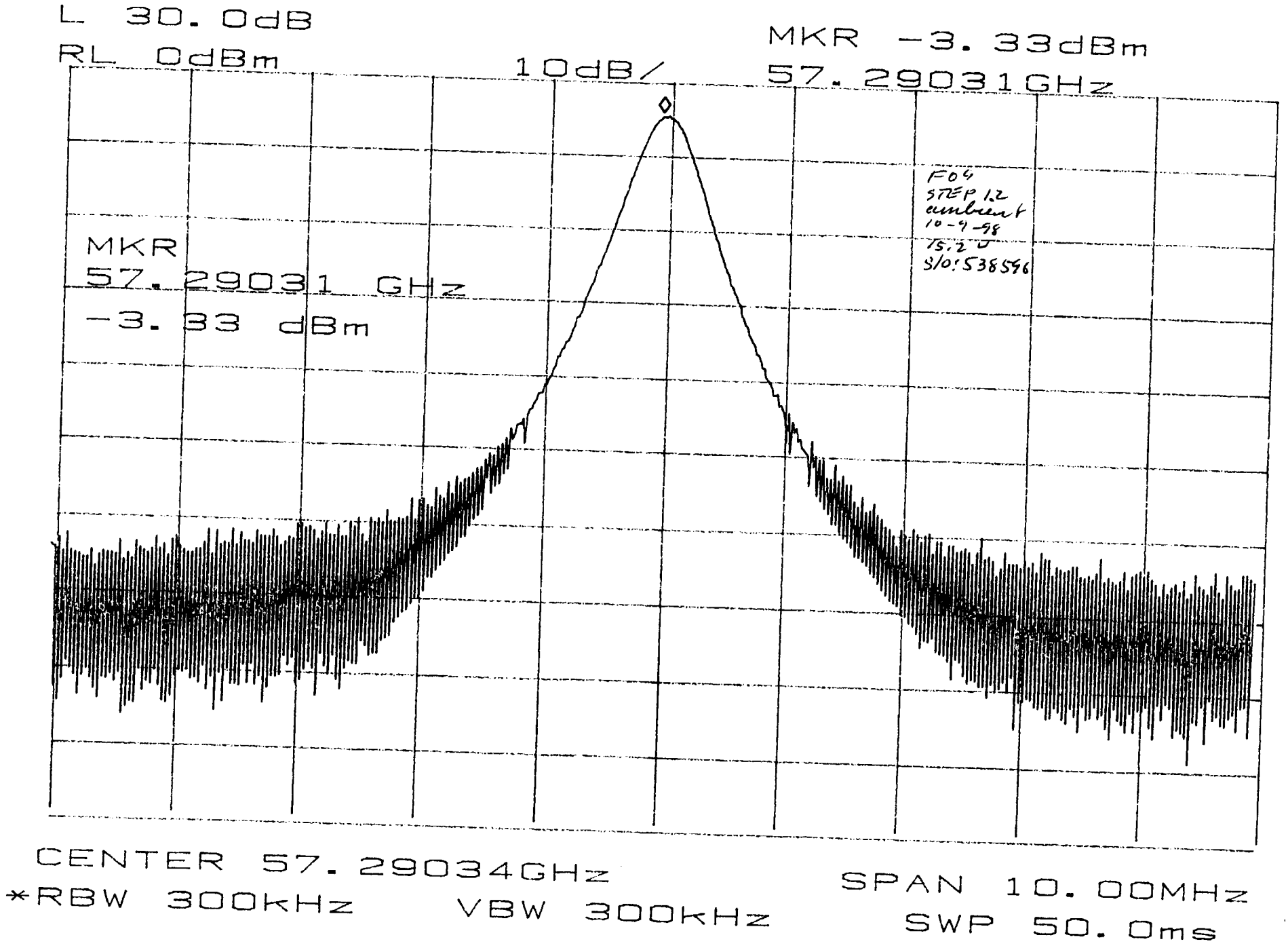
TEST DATA SHEET 6A (Sheet 1 of 4)
Functional Testing (Paragraph 4.2.1)
Pre-Environmental CPT

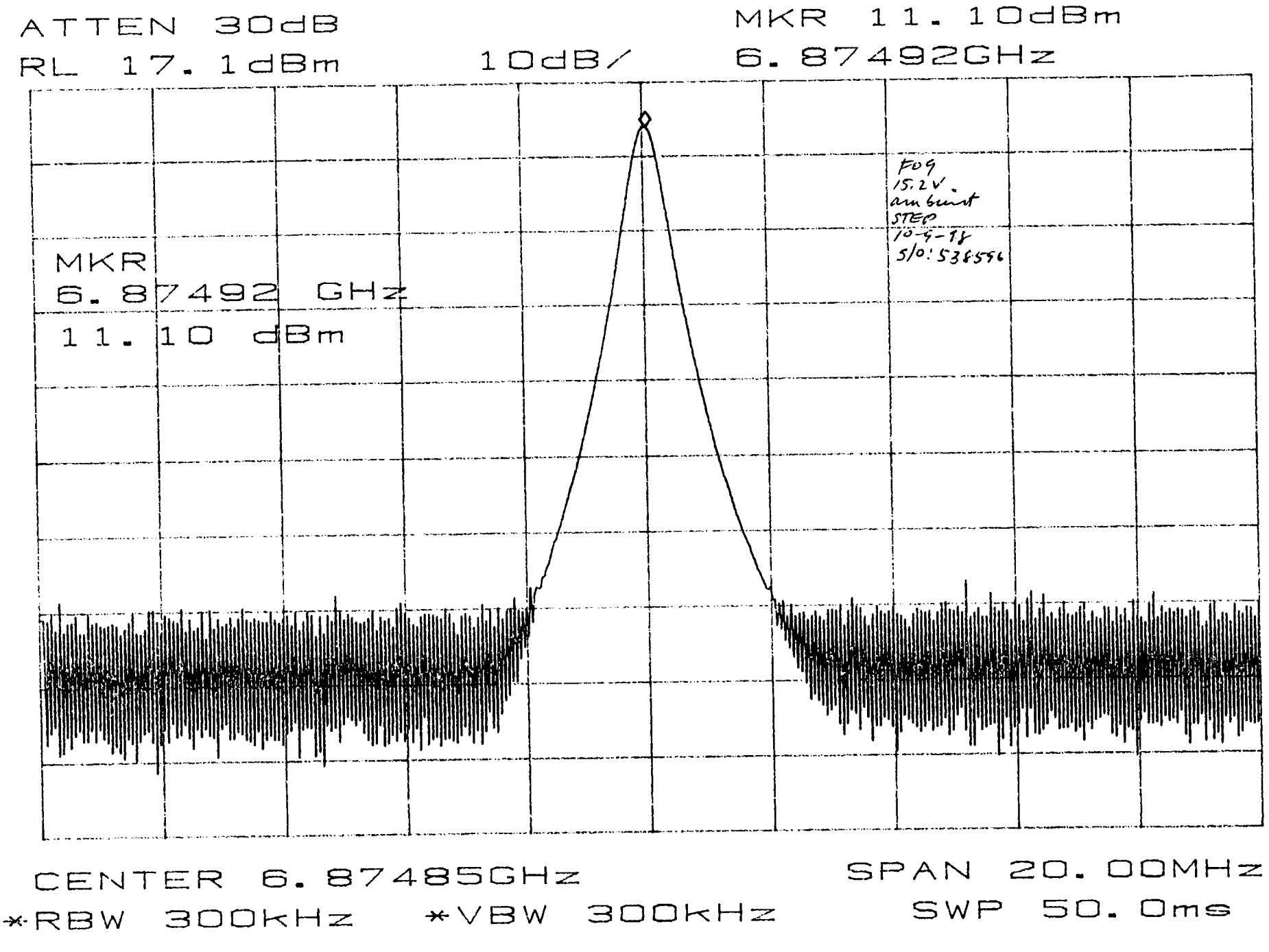
Test Setup Verified: [signature]
Signature

Paragraph 4.2.1.3, Functional Testing:

Step	Test	Expected	Measured	Pass/Fail
1	Potential Difference from ± 15 V RTN to:			
	PLO Base Plate	< 1.0 Vac	0.01	Pass
	Spectrum Analyzer	< 1.0 Vac	0.03	Pass
	Frequency Counter Chassis	< 1.0 Vac	0.01	Pass
	Power Meter Chassis	< 1.0 Vac	0.04	Pass
4	Evacuate vacuum chamber and record pressure	$<10^{-2}$ torr	N/A	N/A*
5	Thermal couple readings	TC1 = 22 ± 2 °C	TC~~1~~ = 22.3 °C (ok as is [signature] 11-18-98)	Pass
			TC~~2~~8 = 22.5 °C	N/A
			TC~~3~~5 = 21.8 °C	N/A
6	DRO L/A	0 to 1V	DRO L/A = 78m V	Pass
	PLO L/A	4.3-4.7V ~~0 to 1V~~ 10/17/98	PLO L/A = 4.52 V	Pass
	Is PLO locked?	Yes	Yes ✓ No ___	
7	PLO Frequency	57.290344 ± .0002 GHz	Freq. = 57.290321180 GHz	Pass
	PLO Power	17 to 20 dBm	P = 17.77 dBm	Pass
8	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.10 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.19 V	Pass
	IM1 Current	600 mA max.	IM1 = 522mA mA	Pass
	IM2 Current	100 mA max.	IM2 = -64.7mA mA	Pass
	DRO L/A Voltage	~~0 to 1V~~ 0 to 1V	DRO L/A = ~~4.520~~ V 78mV	Pass
	PLO L/A Voltage	4.3-4.7V ~~0 to 1V~~ 10/17/98	PLO L/A = 4.52 V	Pass
12	RF Output Power and Frequency	17 to 20 dBm	P = 17.77 dBm	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290321180 GHz	Pass
	Baseplate Temp. (TC1)	TC1 = 22 ±2°C	TC1 = 22.3 °C	Pass
13	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.20 V	Pass
		-15.2 ± 0.05 V	-Voltage = 15.2 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290321322 GHz	Pass
		17 to 20 dBm	P = 17.67 dBm	Pass

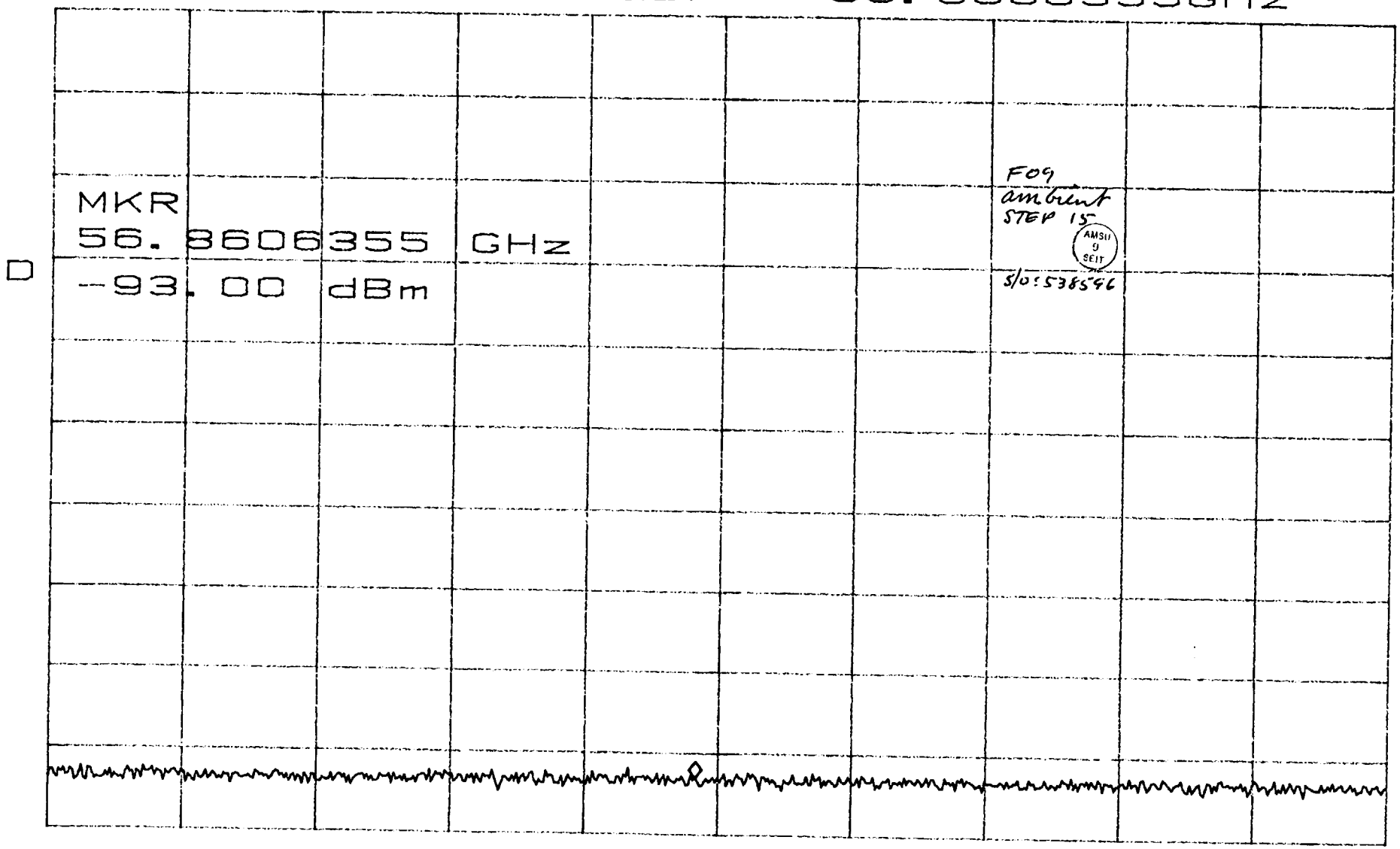
*Record data only if performing test under vacuum


L 30.0dB
RL 0dBm
10dB/
MKR -3.33dBm
57.29031GHz
FOG
STEP 12
ambient
10-9-98
15.2 J
S/O: 538546
MKR
57.29031 GHz
-3.33 dBm
CENTER 57.29034GHz
*RBW 300kHz
VBW 300kHz
SPAN 10.00MHz
SWP 50.0ms


ATTEN 30dB
RL 17.1dBm
10dB/
MKR 11.10dBm
6.87492GHz
MKR
6.87492 GHz
11.10 dBm
FOG
15.2V
ambient
STEP
10-9-98
S/O: 538556
CENTER 6.87485GHz
SPAN 20.00MHz
*RBW 300kHz
*VBW 300kHz
SWP 50.0ms

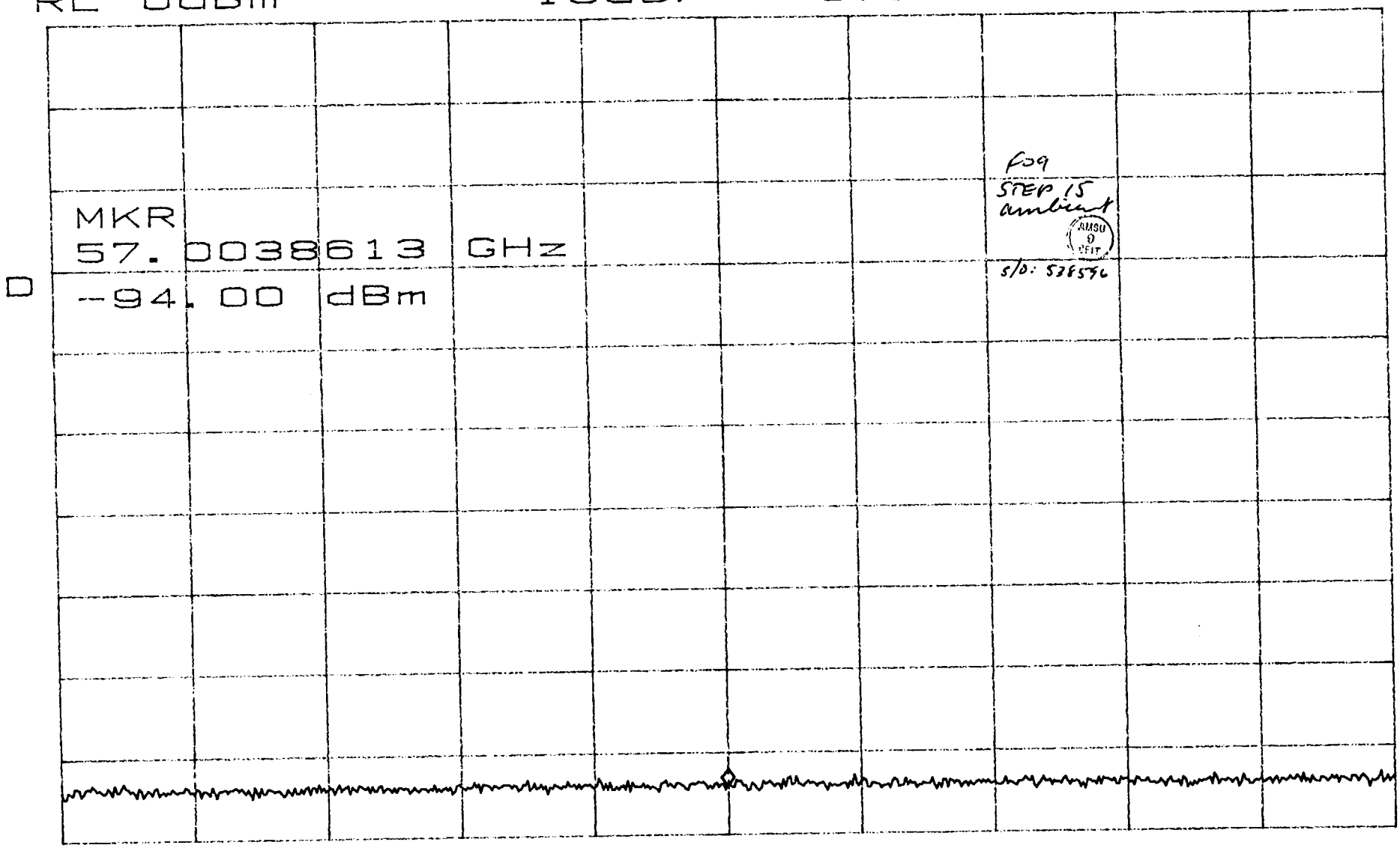
CL 30.0dB VAVG 6 MKR -93.00dBm

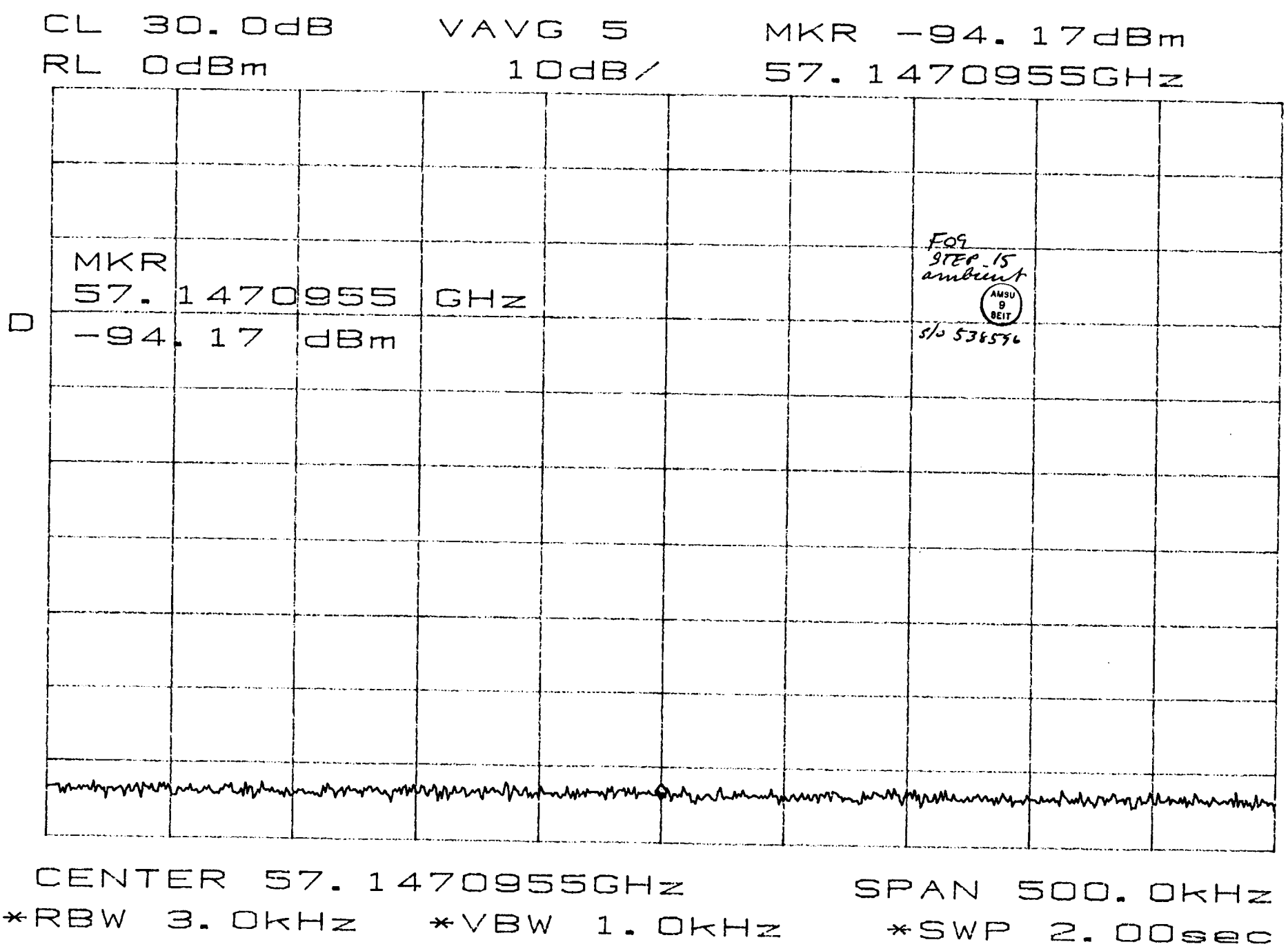
RL 0dBm 10dB/ 56.8606355GHz



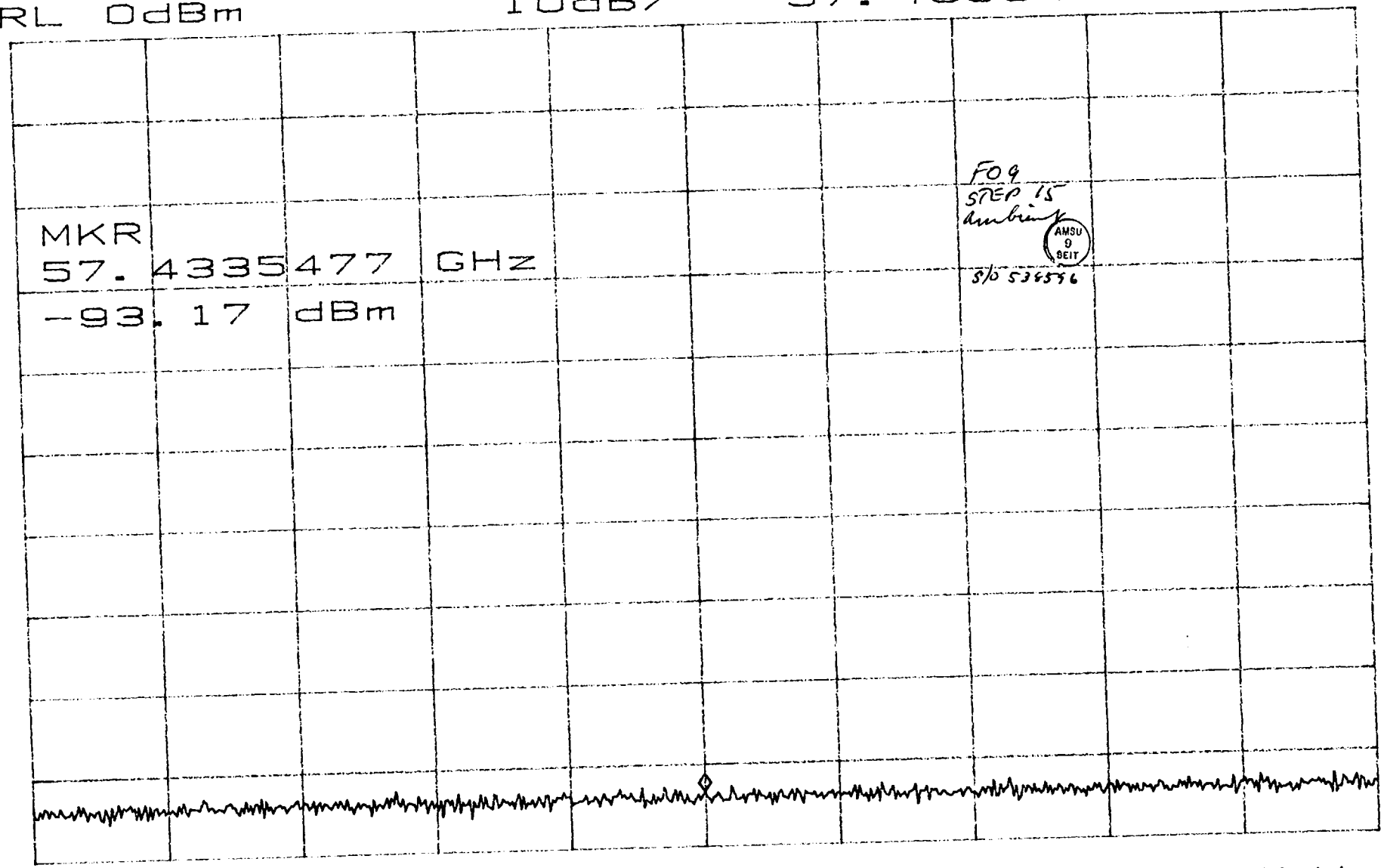
CENTER 56.8606439GHz SPAN 500.0kHz

*RBW 3.0kHz *VBW 1.0kHz *SWP 2.00sec


CL 30.0dB
VAVG 29
MKR -94.00dBm
RL 0dBm
10dB/
57.0038613GHz
MKR
57.0038613 GHz
-94.00 dBm
D
fog
STEP 15
ambient
s/o: 538596
CENTER 57.0038613GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

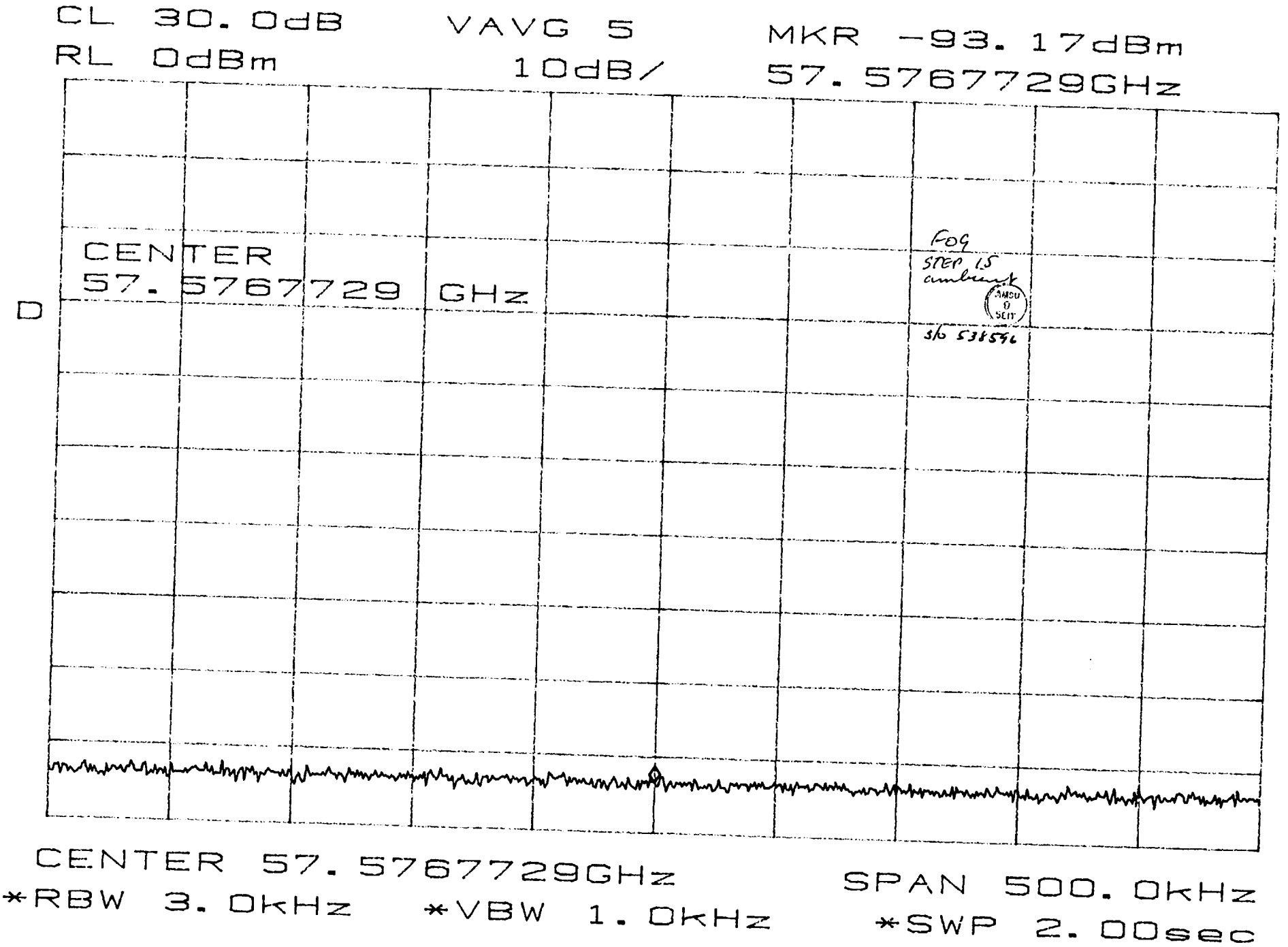

CL 30.0dB
VAVG 5
MKR -94.17dBm
RL 0dBm
10dB/
57.1470955GHz
MKR
57.1470955 GHz
-94.17 dBm
D
FQ9
STEP 15
ambient
AMSU
9
BEIT
S/O 538536
CENTER 57.1470955GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

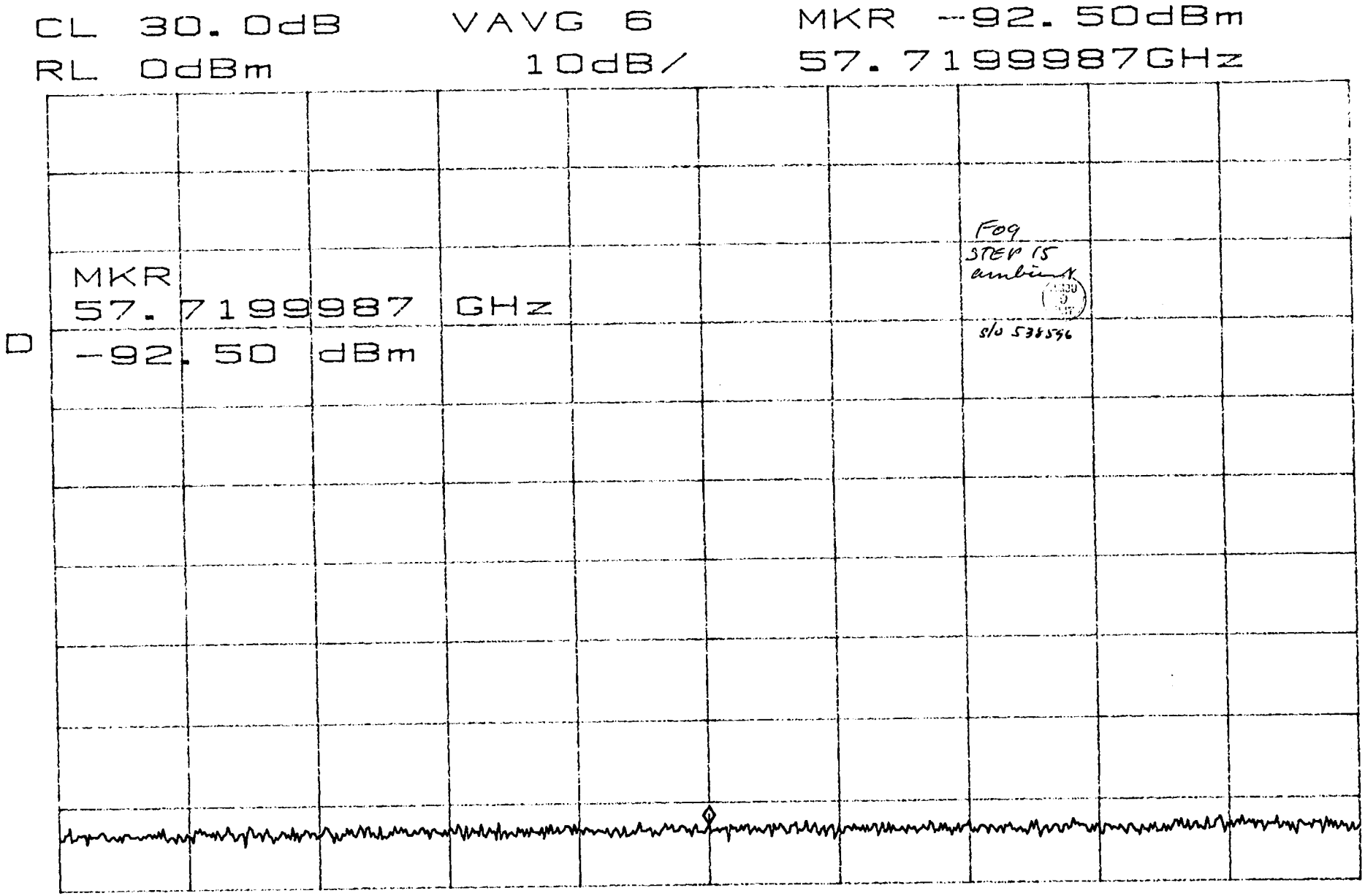
CL 30.0dB VAVG 5 MKR -93.17dBm
RL 0dBm 10dB/ 57.4335477GHz

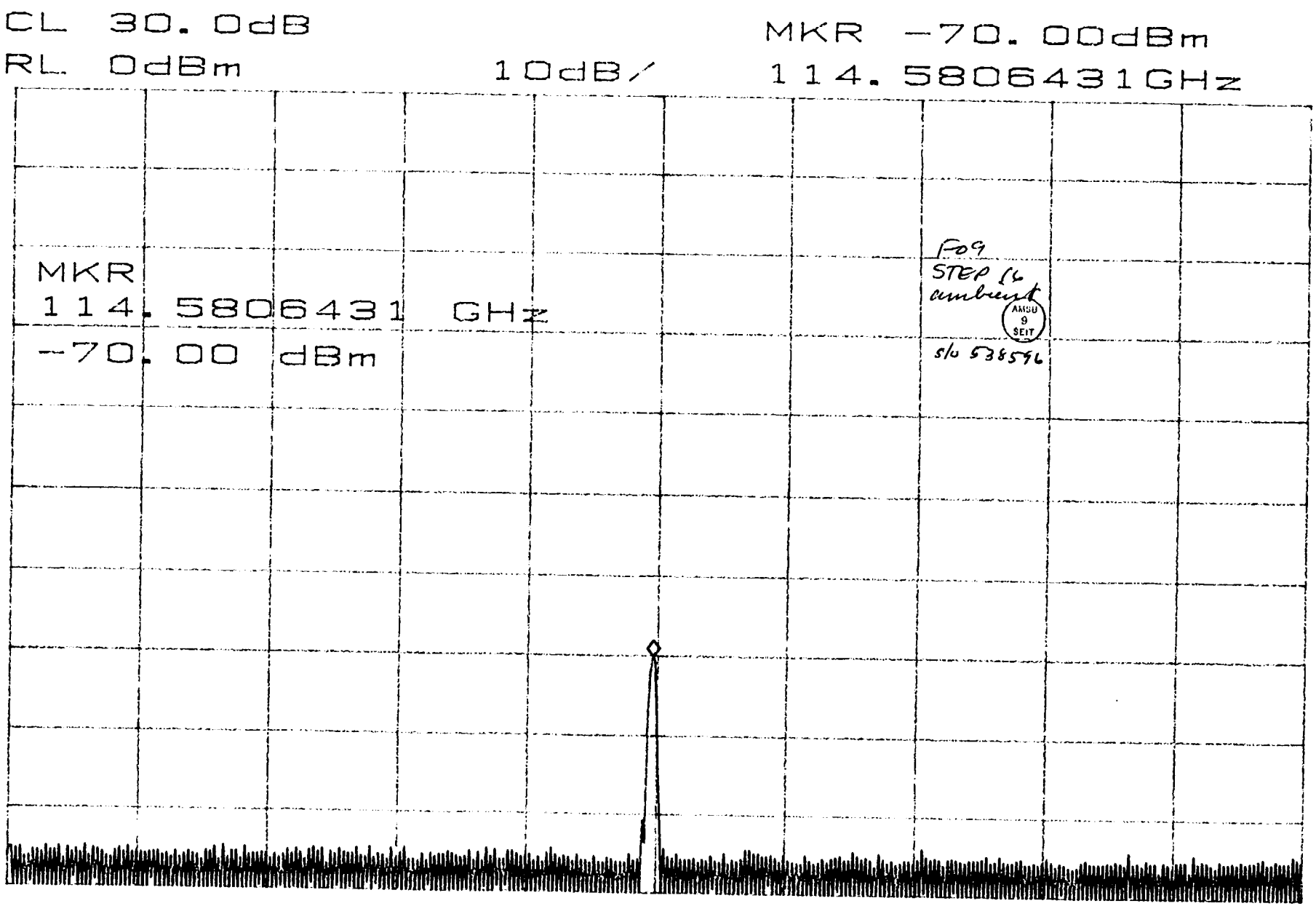


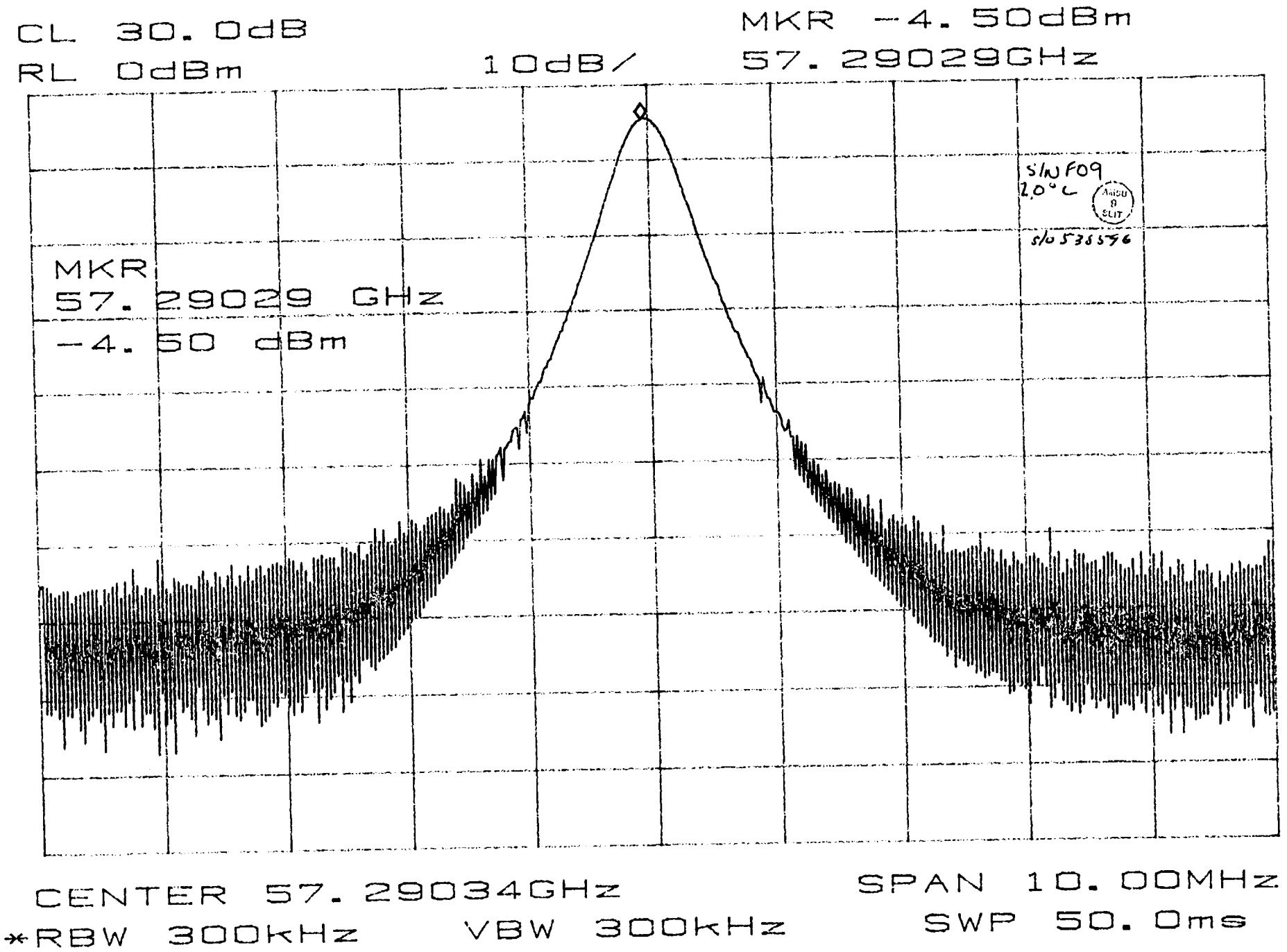
D

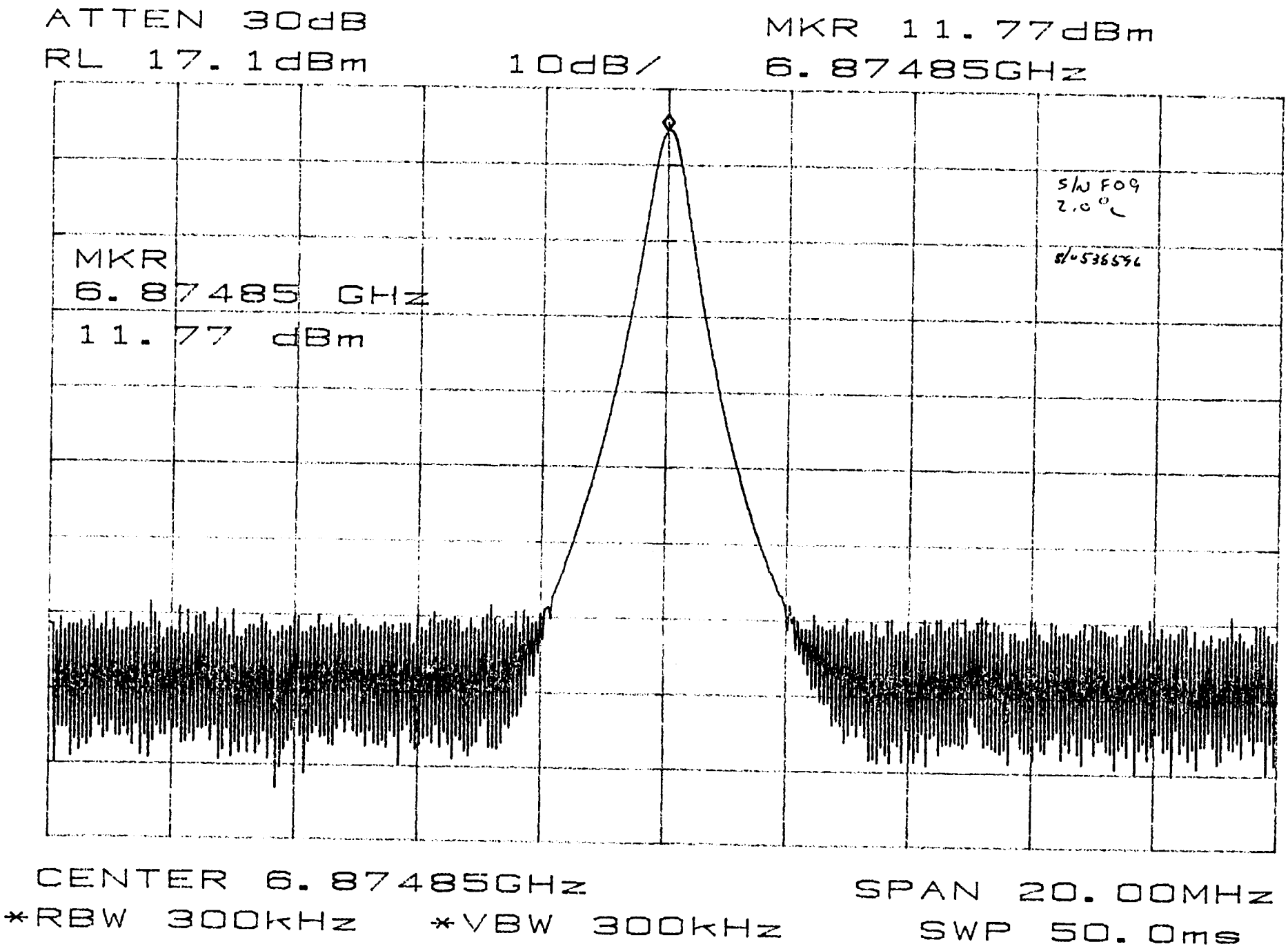
CENTER 57.4335477GHz SPAN 500.0kHz
*RBW 3.0kHz *VBW 1.0kHz *SWP 2.00sec


CL 30.0dB
VAVG 5
MKR -93.17dBm
RL 0dBm
10dB/
57.5767729GHz
CENTER
57.5767729 GHz
D
FOG
STEP 1.5
CENTER 57.5767729GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 6
MKR -92.50dBm
RL 0dBm
10dB/
57.7199987GHz
MKR
57.7199987 GHz
-92.50 dBm
D
Fog
STEP 15
ambient
s/o 538536
CENTER 57.7199987GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
RL 0dBm
10dB/
MKR -70.00dBm
114.5806431GHz
MKR
114.5806431 GHz
-70.00 dBm
F09
STEP 16
ambient
AMSU
9
SEIT
s/n 538596
CENTER 114.5806434GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec


CL 30.0dB
RL 0dBm
10dB/
MKR -4.50dBm
57.29029GHz
MKR
57.29029 GHz
-4.50 dBm
SINFO9
20°C
s/o 5385796
CENTER 57.29034GHz
SPAN 10.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms

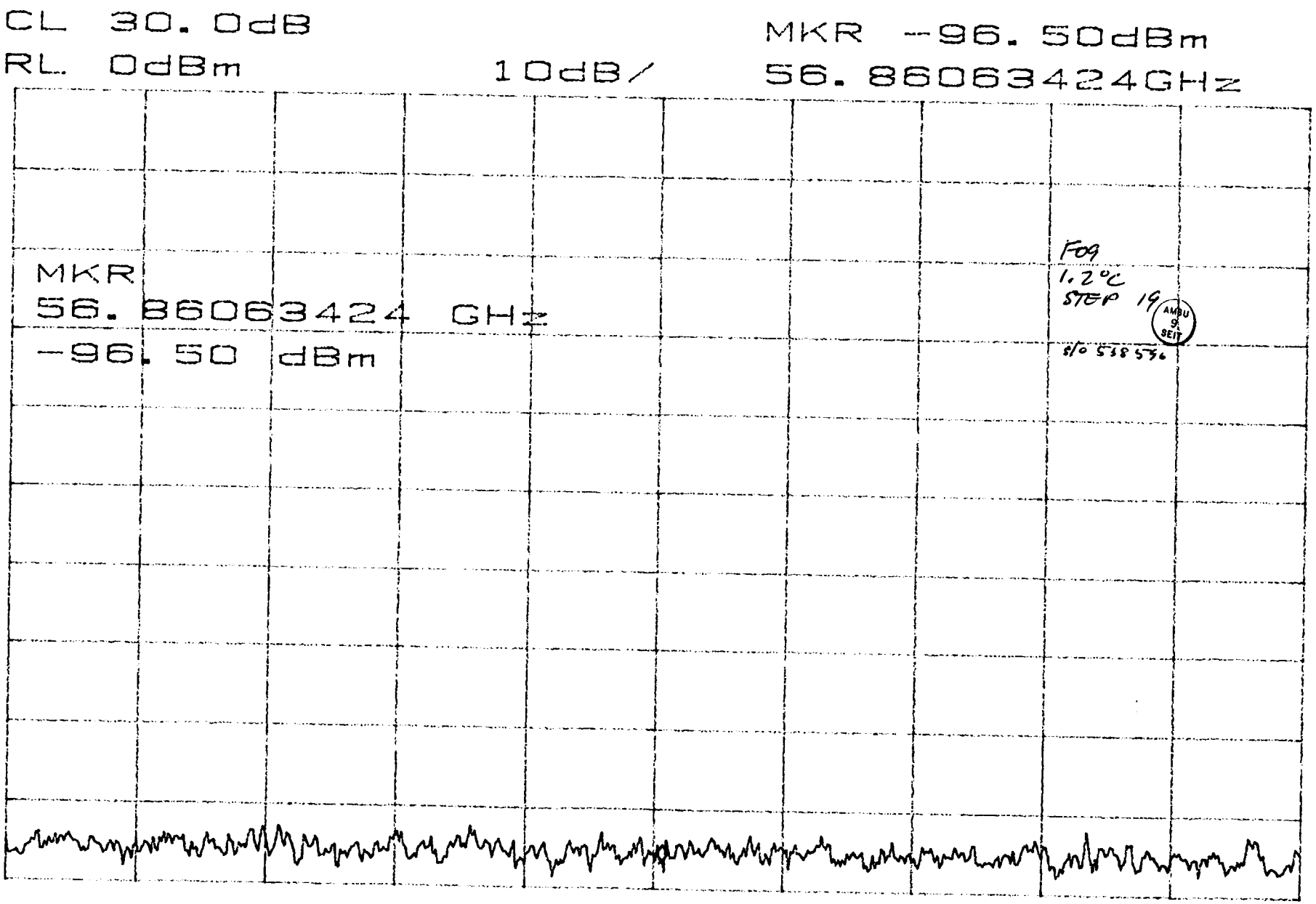

ATTEN 30dB
RL 17.1dBm
10dB/
MKR 11.77dBm
6.87485GHz
S/N F09
2.0°C
8/4536576
MKR
6.87485 GHz
11.77 dBm
CENTER 6.87485GHz
SPAN 20.00MHz
*RBW 300kHz
*VBW 300kHz
SWP 50.0ms

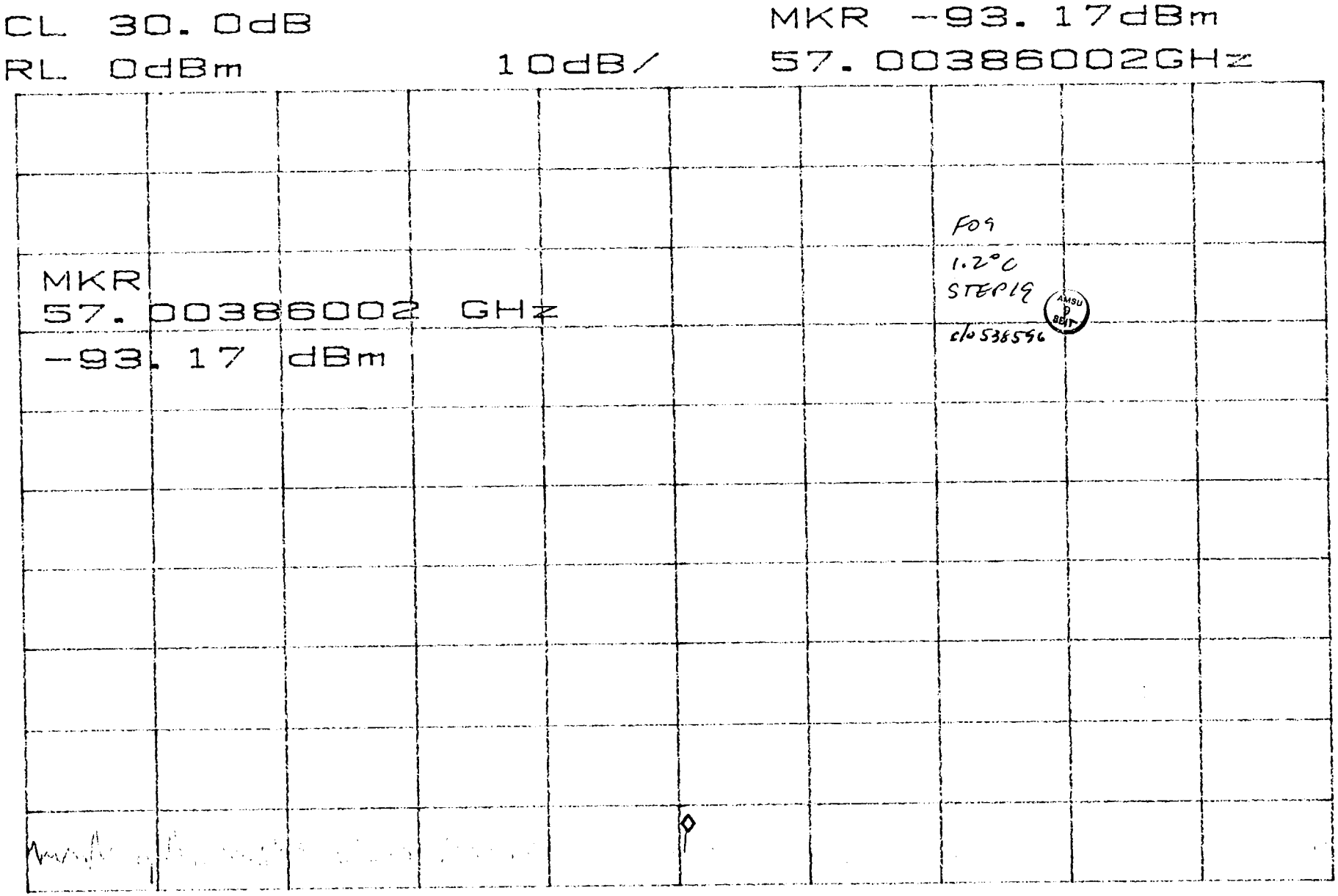
TEST DATA SHEET 6A (Sheet 2 of 4)
Functional Testing (Paragraph 4.2.1)

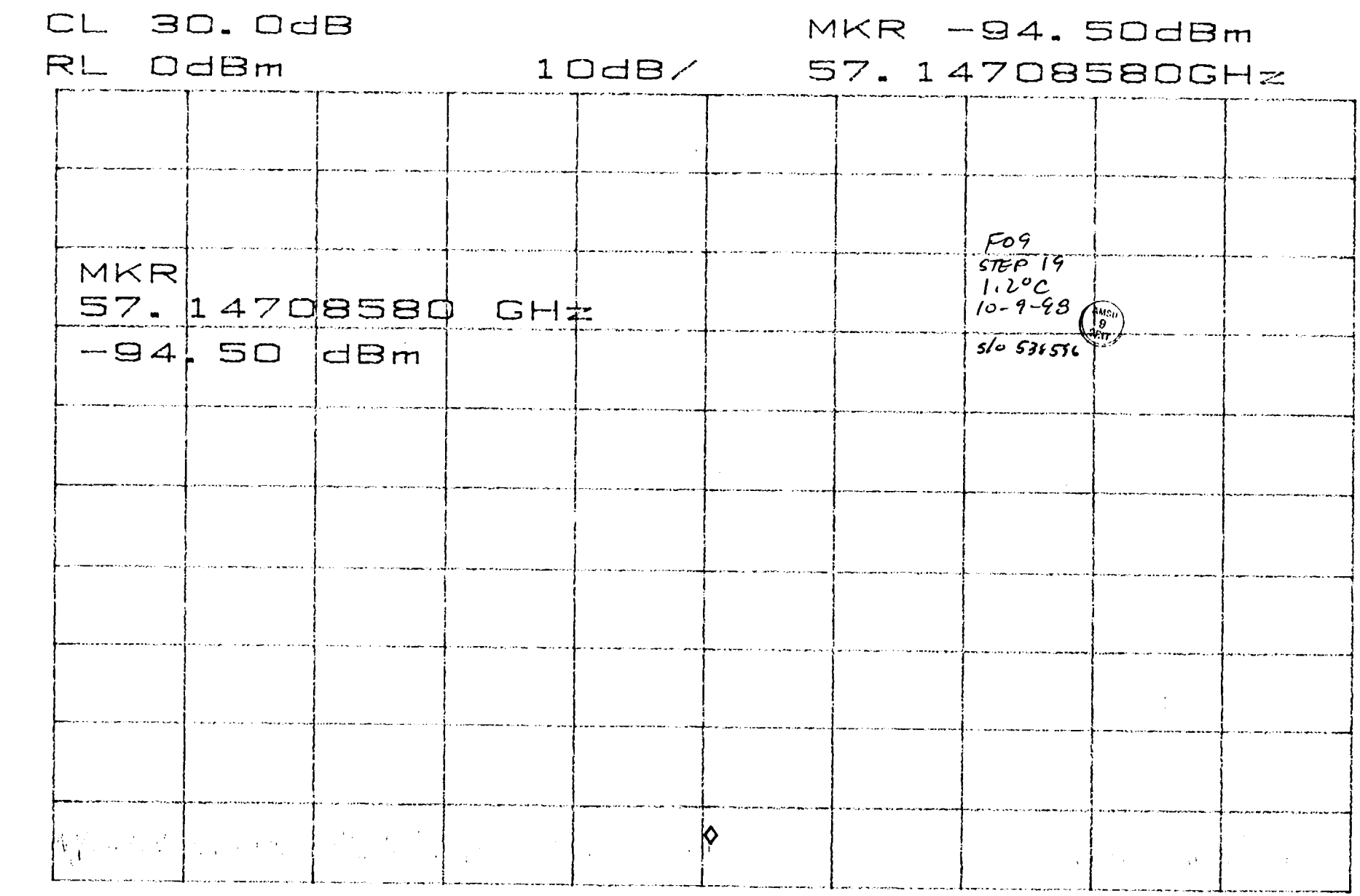
Pre-Environmental CPT

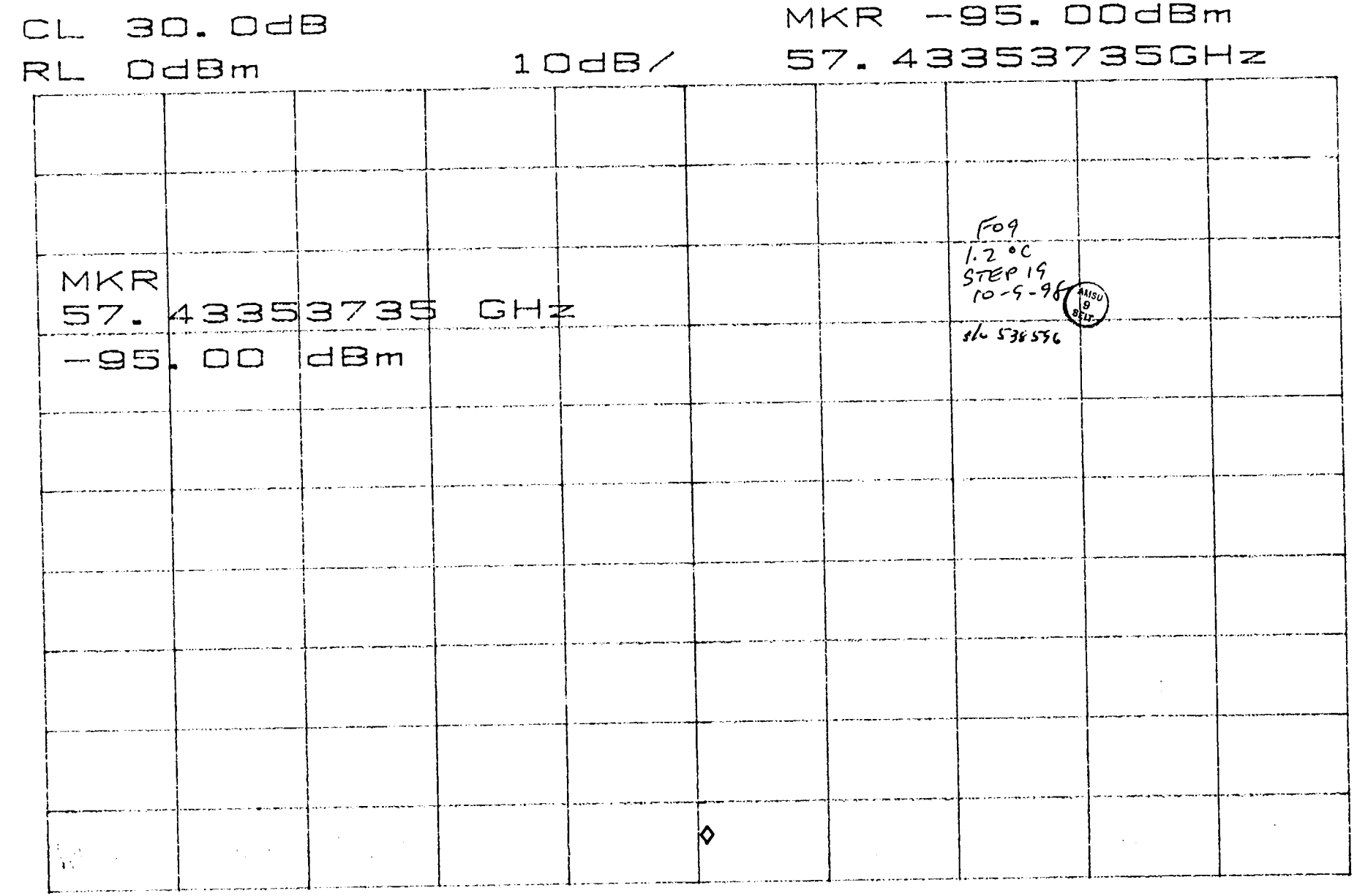
Paragraph 4.2.1.3 (Cont):

Step	Test	Expected	Measured	Pass/Fail
14	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	Pass
		-14.8 ± 0.05 V	-Voltage = -14.8 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290321027 GHz	Pass
		17 to 20 dBm	P = 17.65 dBm	Pass
15	Spurious and Sub	-200 to -90 dBc	See plots	Pass
16	Power level of 114.58 GHz signal	<-10 dBm	-70 dBm	Pass
17	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 10 hr	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .35 dB Peak	N/A
18	Operating Temperature @ 1°C baseplate	TC1 = 1 ±2°C	TC1 = 2.3	
			TC2 = 2.4	N/A
			TC3 = 1.9	N/A
		0 - 1V	DRO L/A = 67.9m V	Pass
		~~4.3-4.7 0 1V~~ 4.3 to 4.7V thermistor 10/9/98	PLO L/A = 4.6 V	✓
19	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 508 mA	
	IM2 Current	100 mA max.	IM2 = -63.2 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 69.9m V	
	PLO L/A Voltage	4.3 to 4.7V ~~0 to 1V~~	PLO L/A = 4.6 V	
	RF Output Power	17 to 20 dBm	Power = 18.17 dBm	
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290311900 GHz	
	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290311595 GHz	
		17 to 20 dBm	Power = 18.26 dBm	
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.290318777 GHz	✓
		17 to 20 dBm	Power = 18.20 dBm	Pass

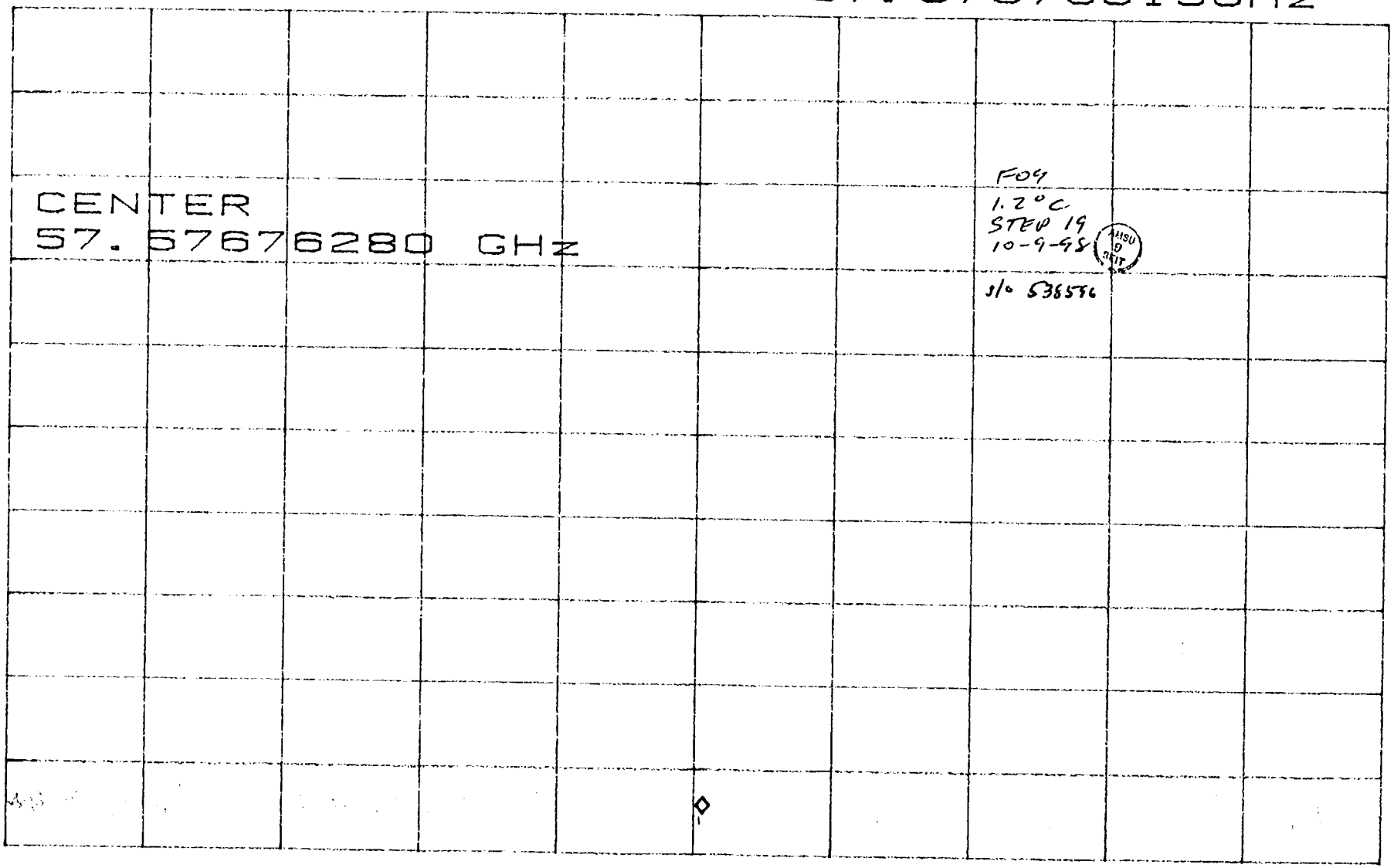

CL 30.0dB
RL 0dBm
10dB/
MKR -96.50dBm
56.86063424GHz
MKR
56.86063424 GHz
-96.50 dBm
Fog
1.2°C
STEP 19
AMBU
SEIT
s/o 538536
CENTER 56.86063391GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms


CL 30.0dB
MKR -93.17dBm
RL 0dBm
10dB/
57.00386002GHz
MKR
57.00386002 GHz
-93.17 dBm
FOG
1.2°C
STEP 19
AMSU B BBM
c/o 538596
CENTER 57.00385969GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms

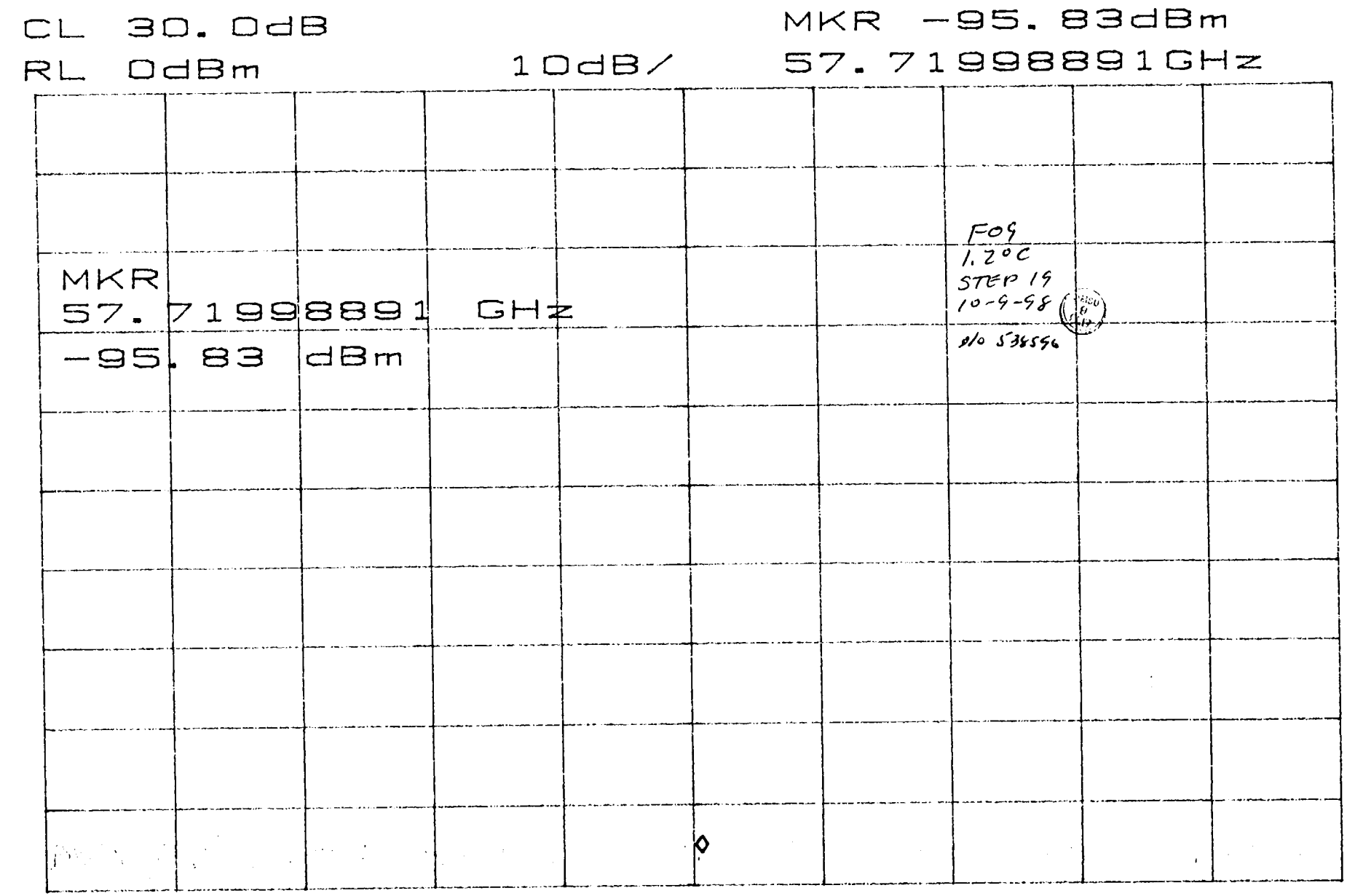

CL 30.0dB
MKR -94.50dBm
RL 0dBm
10dB/
57.14708580GHz
MKR
57.14708580 GHz
-94.50 dBm
F09
STEP 19
1.2°C
10-9-98
s/o 536596
CENTER 57.14708546GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms

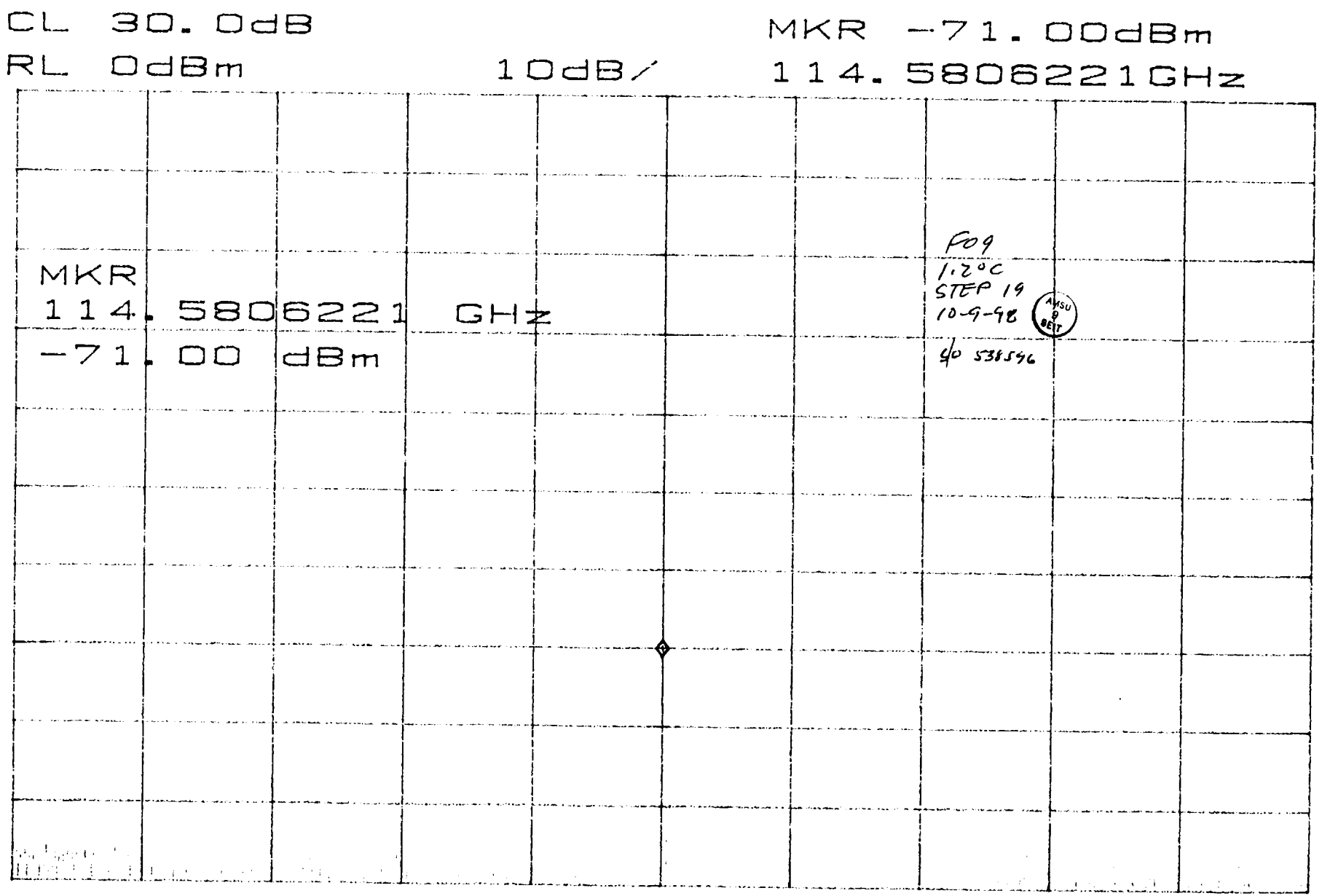

CL 30.0dB
RL 0dBm
10dB/
MKR -95.00dBm
57.43353735GHz
MKR
57.43353735 GHz
-95.00 dBm
Fog
1.2 °C
STEP 19
10-9-96
s/n 538556
CENTER 57.43353702GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms

CL 30.0dB
RL 0dBm
10dB/
MKR -95.17dBm
57.576763130GHz



CENTER 57.576762800GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms


CL 30.0dB
RL 0dBm
10dB/
MKR -95.83dBm
57.71998891GHz
MKR
57.71998891 GHz
-95.83 dBm
FOG
1.20C
STEP 19
10-9-98
s/o 538556
CENTER 57.71998858GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 200ms

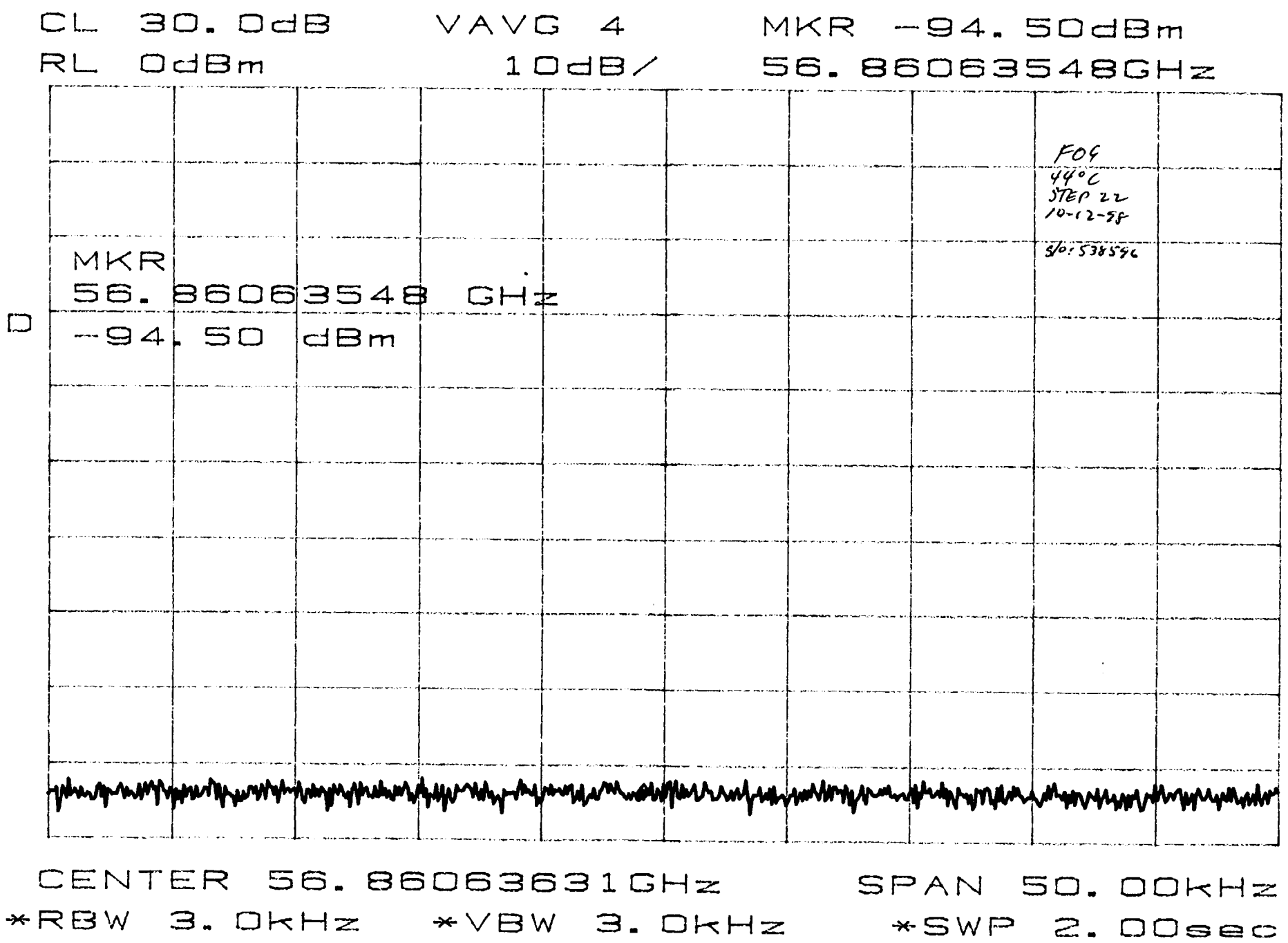

CL 30.0dB
MKR -71.00dBm
RL 0dBm
10dB/
114.5806221GHz
MKR
114.5806221 GHz
-71.00 dBm
Fog
1.2°C
STEP 19
10-9-98
AMSU B BE1T
40 538596
CENTER 114.5806221GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

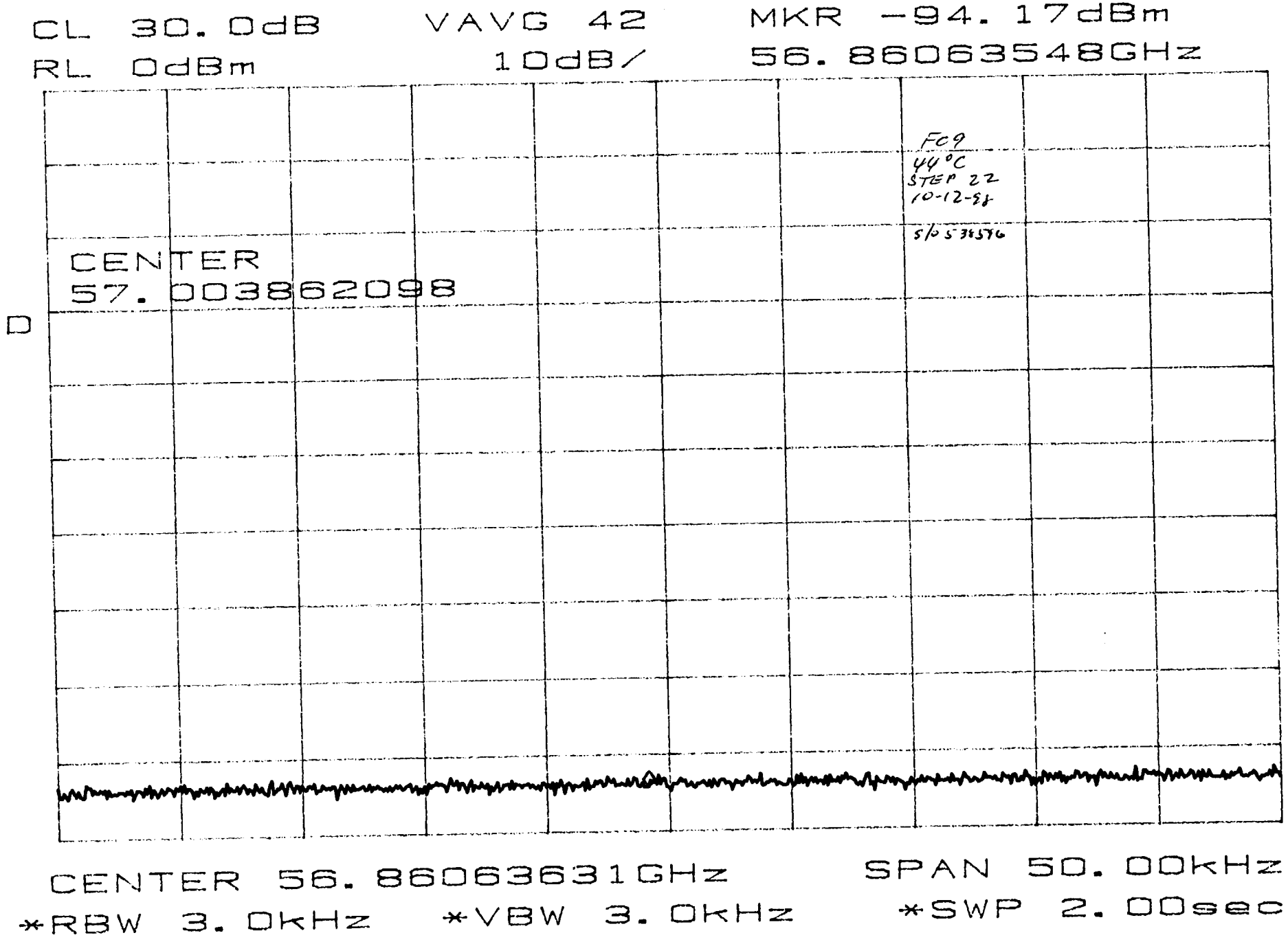
TEST DATA SHEET 6A (Sheet 3 of 4)
Functional Testing (Paragraph 4.2.1)

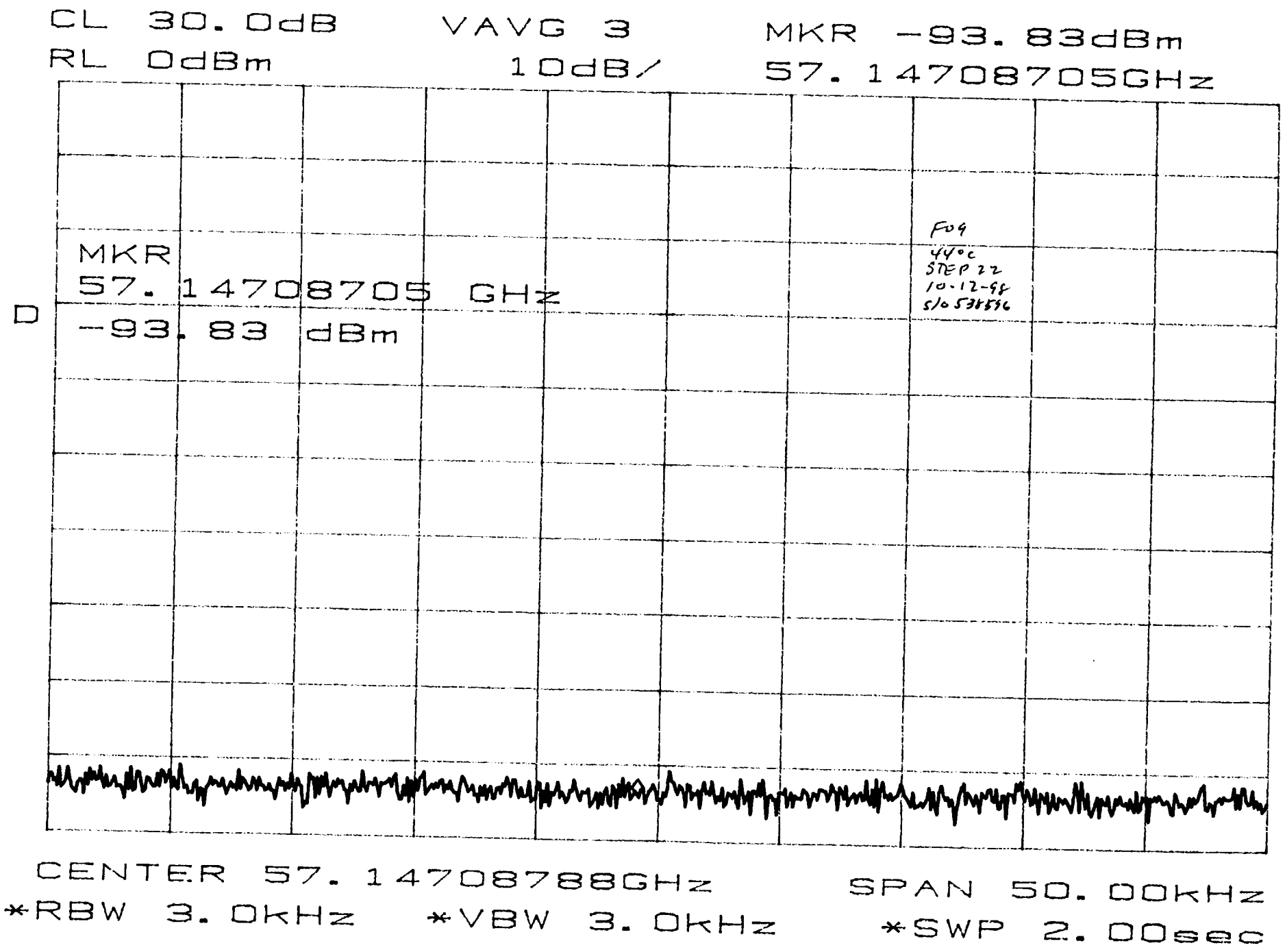
Pre-Environmental CPT

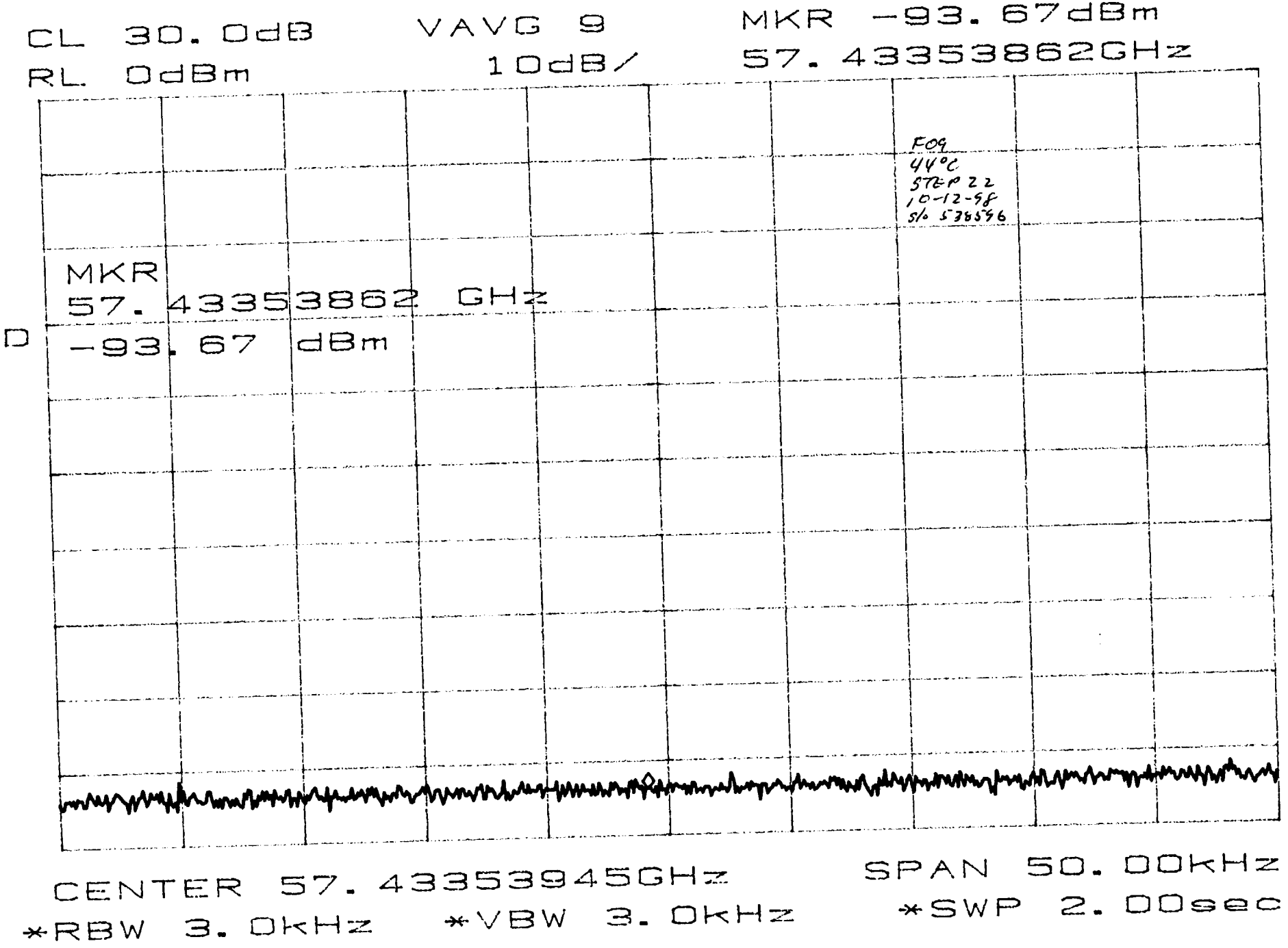
Paragraph 4.2.1.3 (Cont):

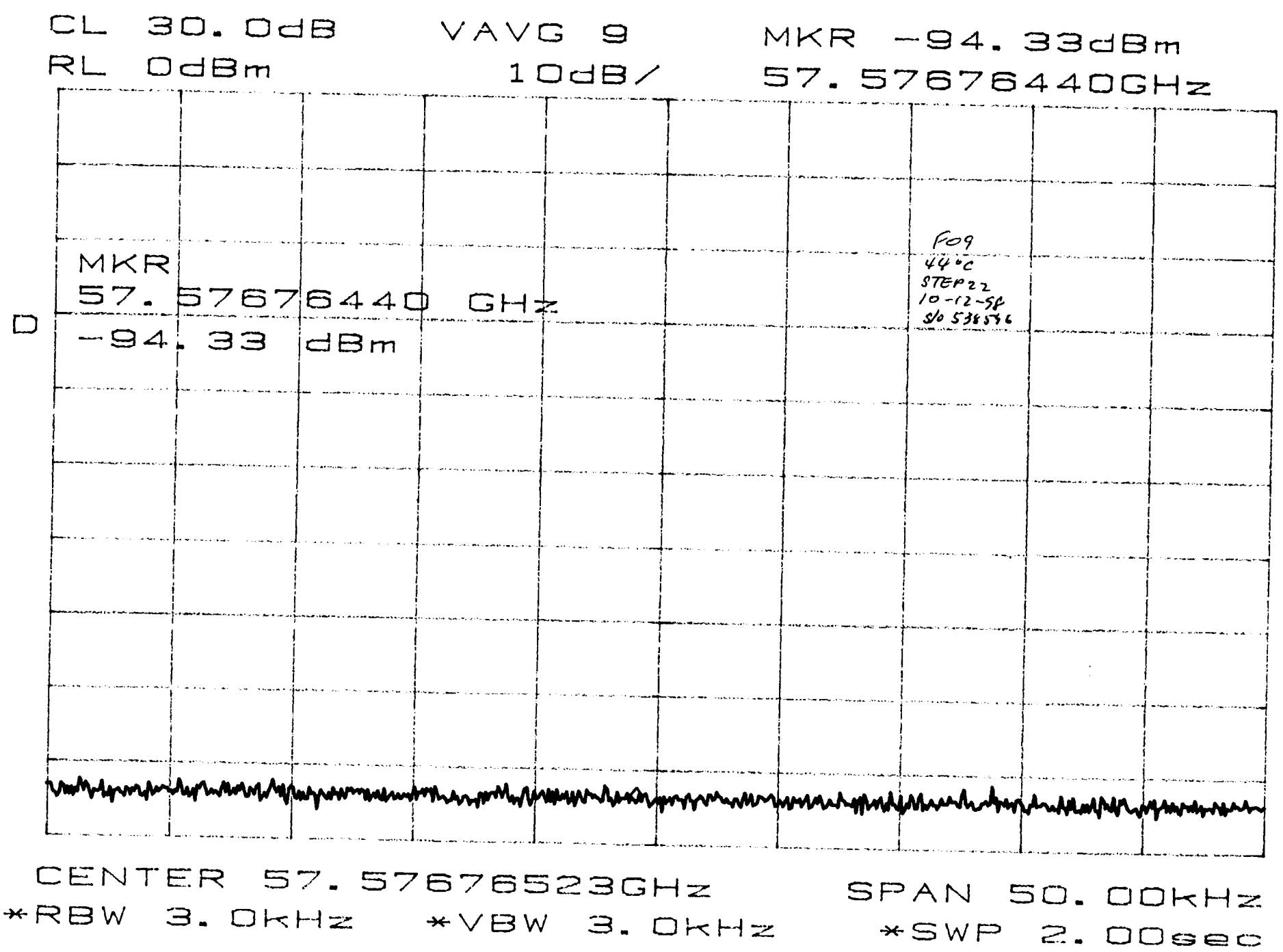
Step	Test	Expected	Measured	Pass/Fail
19 (Cont)	Spurious and Sub	-200 to -90 dBc	see plots	PASS
	Power level of 114.58 GHz signal	<-10 dBm	-71.0 dBm	PASS
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 12 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .23 dB	N/A
21	Operating Temperature @ +44°C Baseplate	TC1 = 44 ±2°C	TC1 = 44.2°C	Pass
			TC2 = 44.3°C	N/A
			TC3 = 43.4°C	N/A
		0 - 1V	DRO L/A = 120m V	Pass
		~~0 - 1V~~ 4.3-4.7V (229)	PLO L/A = 4.5 V	Pass
22	Input Voltage and Current 10/12/98			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.12 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.12 V	Pass
	IM1 Current	600 mA max.	IM1 = 535 mA	Pass
	IM2 Current	100 mA max.	IM2 = ~66 mA	Pass
	DRO L/A Voltage	0 to 1V	DRO L/A = 120m V	Pass
	PLO L/A Voltage (229)	~~0 to 1V~~ 4.3-4.7V	PLO L/A = 4.5 V	Pass
	RF Output Power and 10/12/98	17 to 20 dBm	Power = 17.04 dBm	Pass
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290313666 GHz	Pass
	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.20 V	Pass
		-15.2 ± 0.05 V	-Voltage = 15.20 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290313677 GHz	Pass
		17 to 20 dBm	Power = 17.02 dBm	Pass
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	Pass
		-14.8 ± 0.05 V	-Voltage = 14.8 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290313674 GHz	Pass
		17 to 20 dBm	Power = 17 dBm	Pass

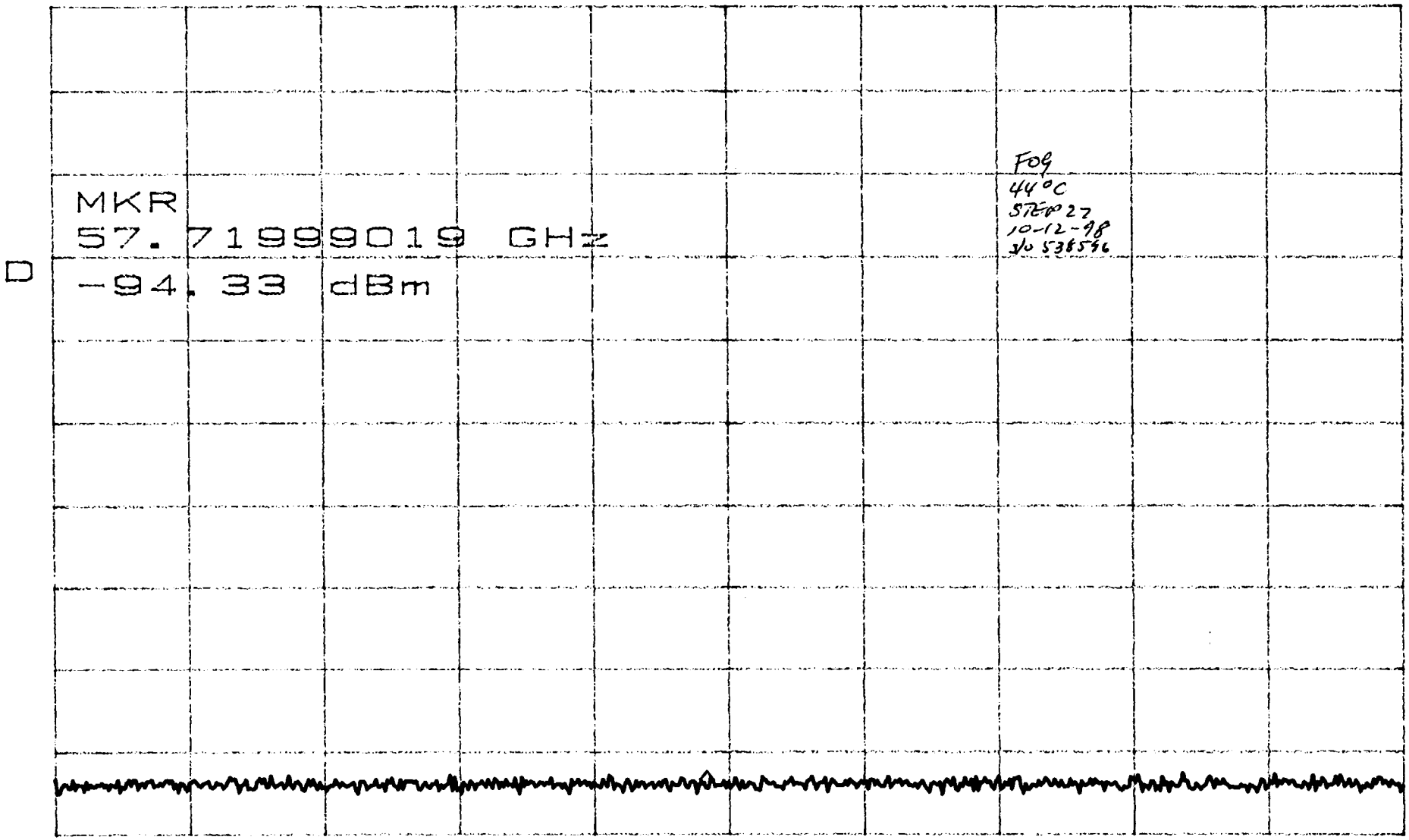

CL 30.0dB
VAVG 4
MKR -94.50dBm
RL 0dBm
10dB/
56.86063548GHz
FOG
44°C
STEP 22
10-12-88
S/O: 538546
MKR
56.86063548 GHz
-94.50 dBm
D
CENTER 56.86063631GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec

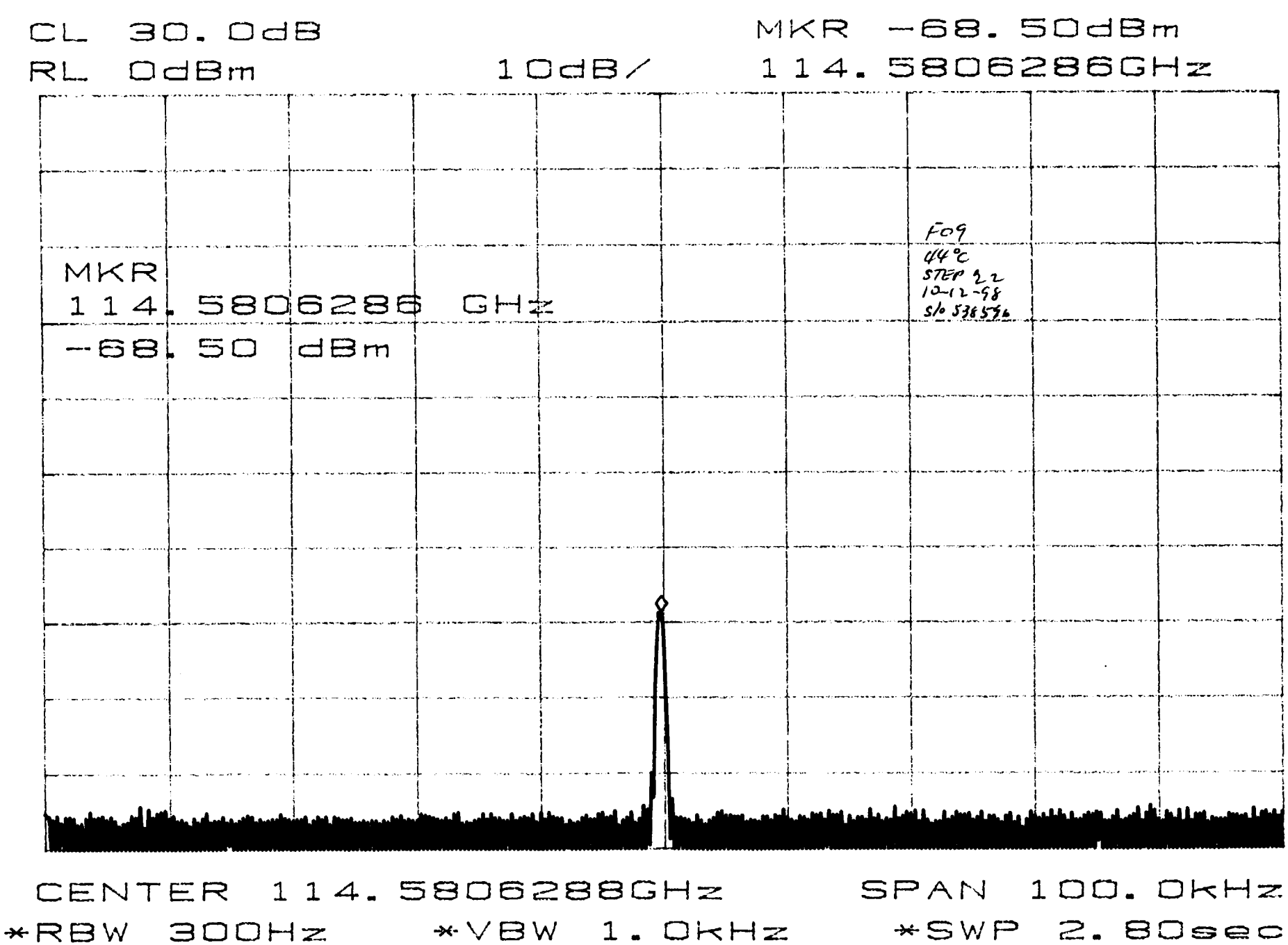

CL 30.0dB
VAVG 42
MKR -94.17dBm
RL 0dBm
10dB/
56.860635480GHz
FC9
44°C
STEP 22
10-12-98
S/O 538576
CENTER
57.003862098
D
CENTER 56.860636310GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 3
MKR -93.83dBm
RL 0dBm
10dB/
57.14708705GHz
MKR
57.14708705 GHz
-93.83 dBm
D
Fo9
44°c
STEP 22
10-12-98
s/o 538556
CENTER 57.14708788GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 9
MKR -93.67dBm
RL 0dBm
10dB/
57.43353862GHz
FOG
44°C
STEP 22
10-12-98
S/o 538596
MKR
57.43353862 GHz
D
-93.67 dBm
CENTER 57.43353945GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 9
MKR -94.33dBm
RL 0dBm
10dB/
57.576764400GHz
MKR
57.57676440 GHz
-94.33 dBm
D
F09
44°C
STEP 22
10-12-5F
S/O 538556
CENTER 57.576765230GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 23
MKR -94.33dBm
RL 0dBm
10dB/
57.719990190GHz
MKR
57.719990190 GHz
-94.33 dBm
D
Fog
44°C
STEP 27
10-12-98
s/o 538596
CENTER 57.719991020GHz
SPAN 50.00kHz
*RBW 3.0kHz
*VBW 3.0kHz
*SWP 2.00sec


CL 30.0dB
MKR -68.50dBm
RL 0dBm
10dB/
114.5806286GHz
MKR
114.5806286 GHz
-68.50 dBm
FCC
44°C
STEP 22
10-12-98
S/N 538576
CENTER 114.5806288GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

TEST DATA SHEET 6A (Sheet 4 of 4)
Functional Testing (Paragraph 4.2.1)

Pre-Environmental CPT

Paragraph 4.2.1.3 (Cont):

Step	Test	Expected	Measured	Pass/Fail
22 (Cont)	Spurious and Sub	-200 to -90 dBc	see plots	Pass
	Power level of 114.58 GHz signal	<-10 dBm	-68 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 106	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .25 dB	N/A

Shop Order No.: 538596

Operation: 0110

Unit Serial No.: F09

Date: 10-12-98

Test Engineer: AMSU 9 SEIT

Quality Control: 74 268 OCT 13 '98

Govt. Rep.: J. Malagac 11-1.

Section 1B: Initial Functional Testing - F10

This section contains the results of a full functional test over temperature taken before PLO F10 endured thermal cycling. All tests passed.

TEST DATA SHEET 6A (Sheet 1 of 4)
Functional Testing (Paragraph 4.2.1)

Pre-Environmental CPT

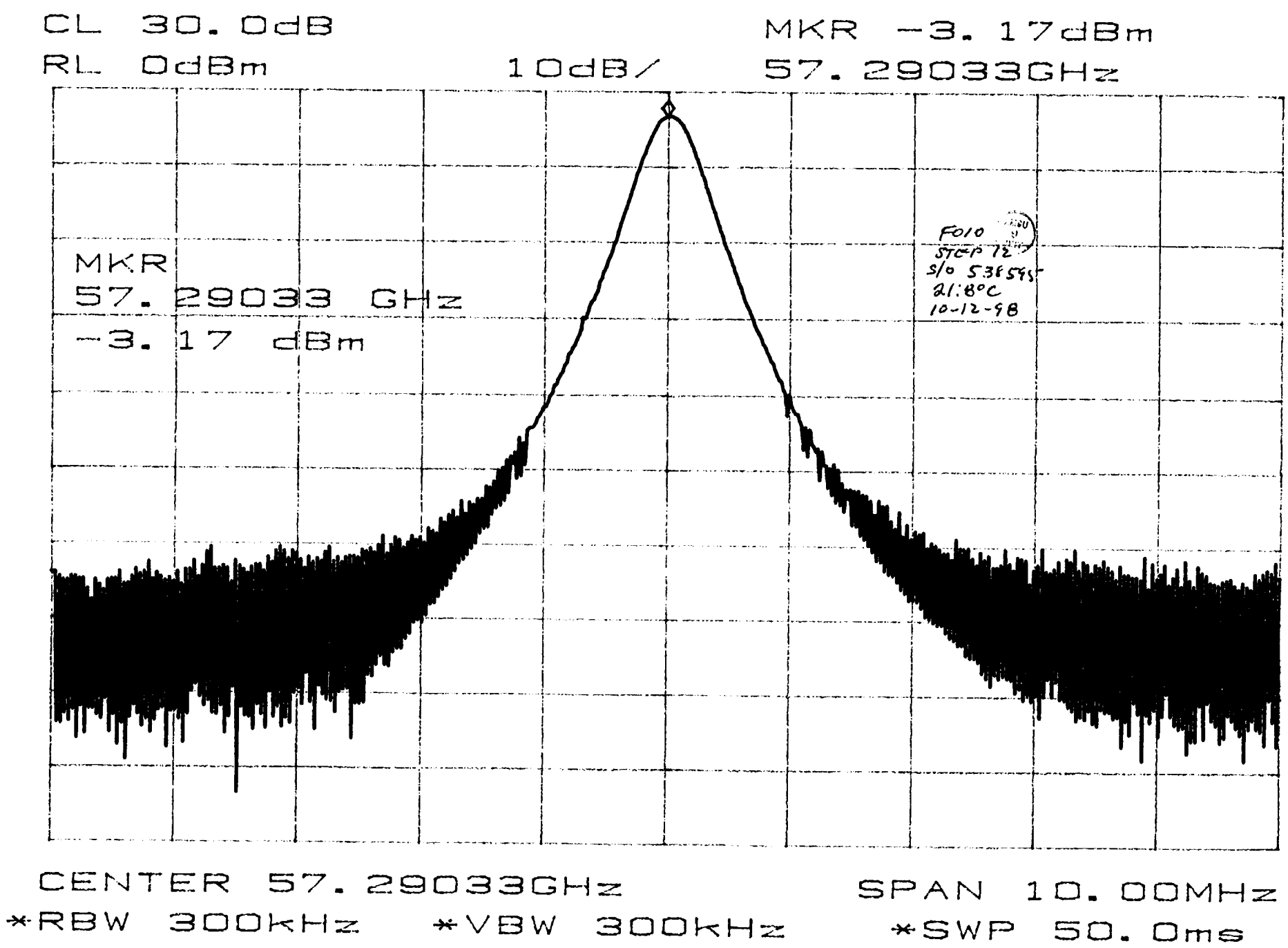
Test Setup Verified: _____
Signature

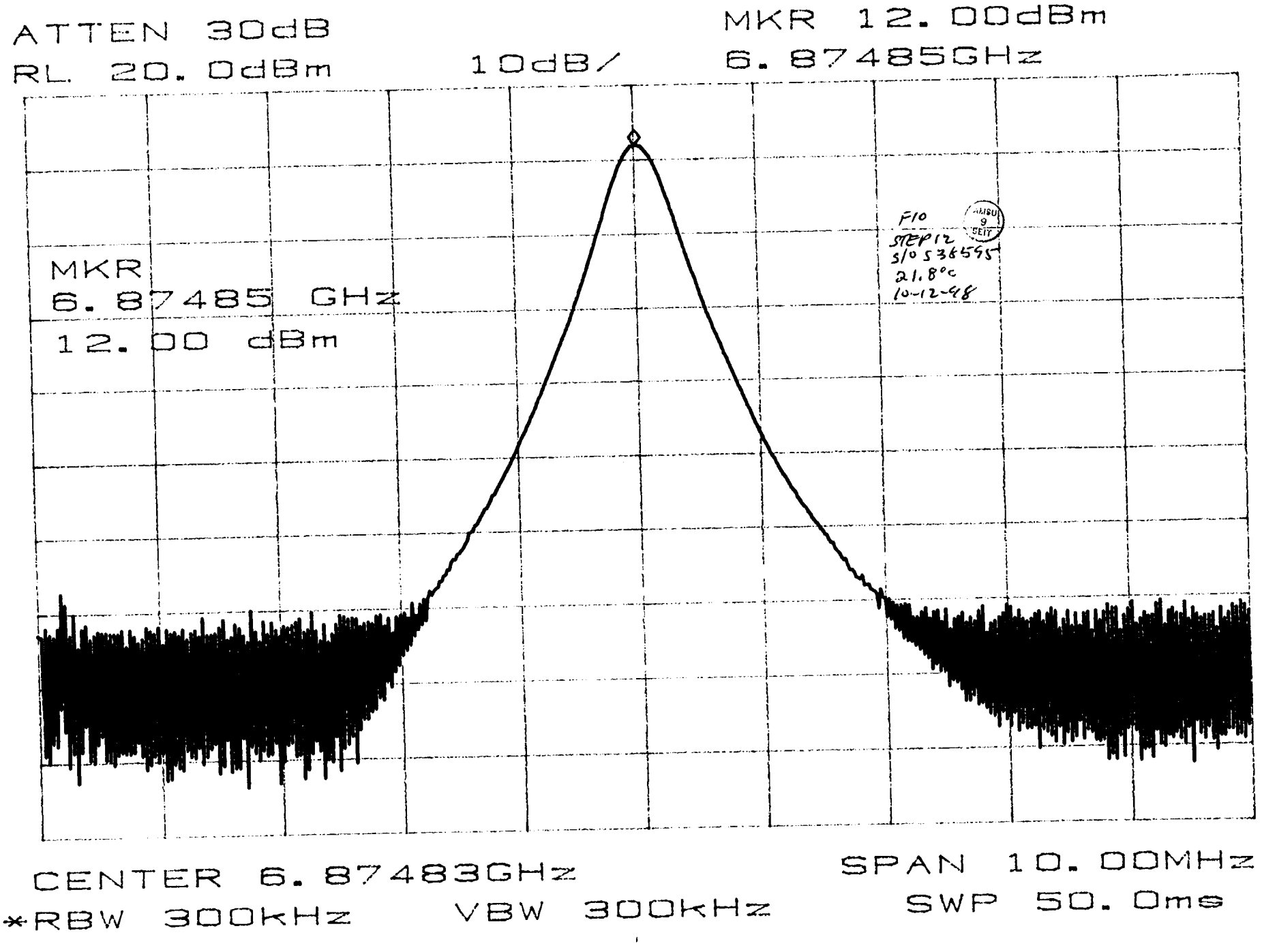
Paragraph 4.2.1.3, Functional Testing:

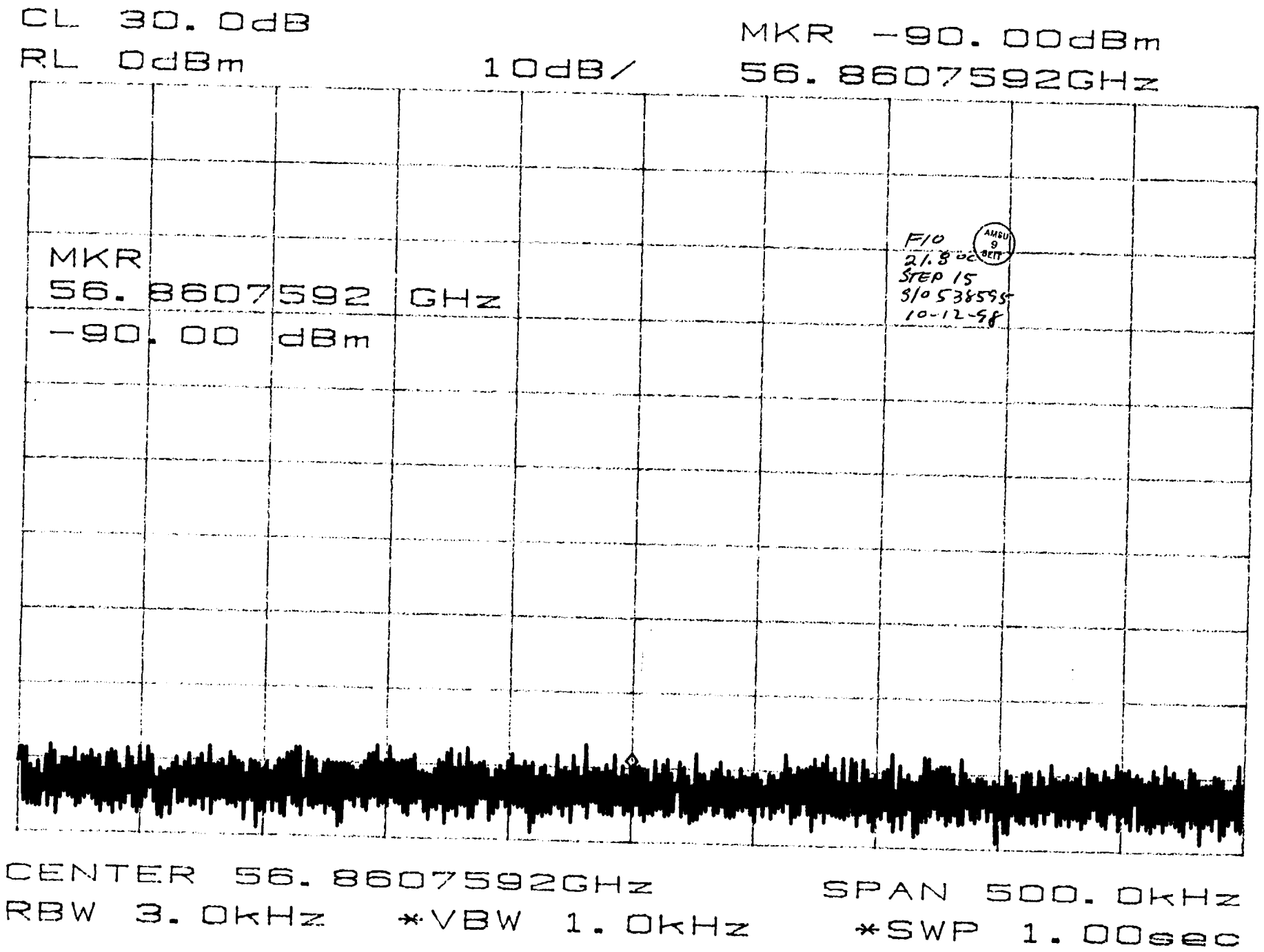
Step	Test	Expected	Measured	Pass/Fail
1	Potential Difference from ± 15 V RTN to:			
	PLO Base Plate	< 1.0 Vac	0.03	Pass
	Spectrum Analyzer	< 1.0 Vac	0.03	Pass
	Frequency Counter Chassis	< 1.0 Vac	0.02	Pass
	Power Meter Chassis	< 1.0 Vac	0.03	Pass
4	Evacuate vacuum chamber and record pressure	$<10^{-5}$ torr	N/A	N/A*
5	Thermal couple readings	TC1 = 22 ± 2 °C	TC1 = 21.8 °C	
			TC2 = 22.3 °C	N/A
			TC3 = 21.22 °C	N/A
6	DRO L/A	0 to 1V	DRO L/A = 54 mV	Pass
	PLO L/A	~~0 to 1V~~ 4.3-4.7 ✓	PLO L/A = 4.49 V	
	Is PLO locked?	Yes	Yes ✓ No _____	
7	PLO Frequency	57.290344 ± .0002 GHz	Freq. = 57.290341378 GHz	
	PLO Power	17 to 20 dBm	P = 18.48 dBm	
8	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 531 mA	
	IM2 Current	100 mA max.	IM2 = 67 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 54 mV	
	PLO L/A Voltage	~~0 to 1V~~ 4.3-4.7 ✓	PLO L/A = 4.49 V	
12	RF Output Power and Frequency	17 to 20 dBm	P = 18.48 dBm	
		57.290344 ± .0002 GHz	Freq. = 57.290341378 GHz	
	Baseplate Temp. (TC1)	TC1 = 22 ±2°C	TC1 = 21.8 °C	
13	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290341368 GHz	
		17 to 20 dBm	P = 18.40 dBm	Pass

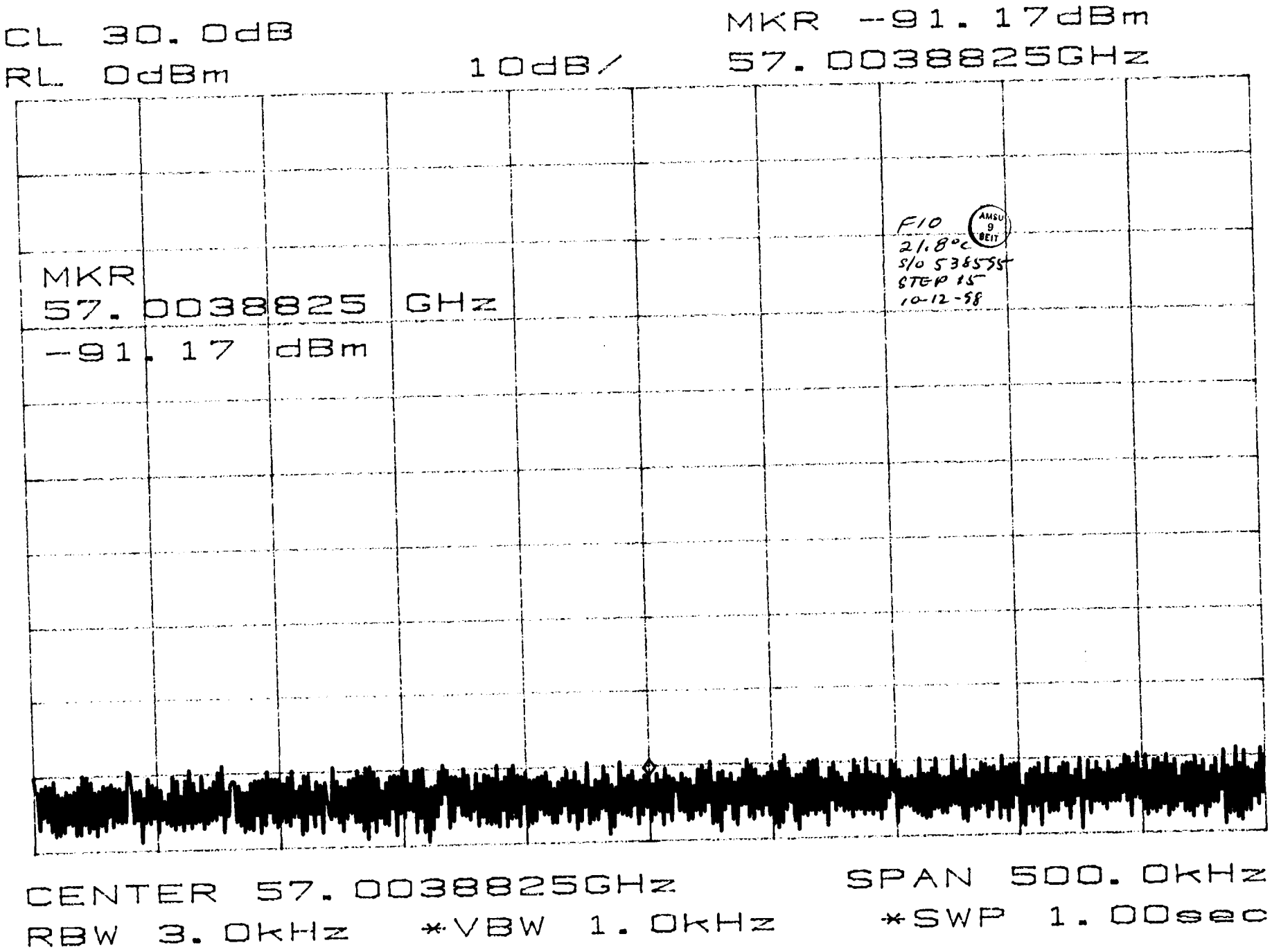
10/13/98

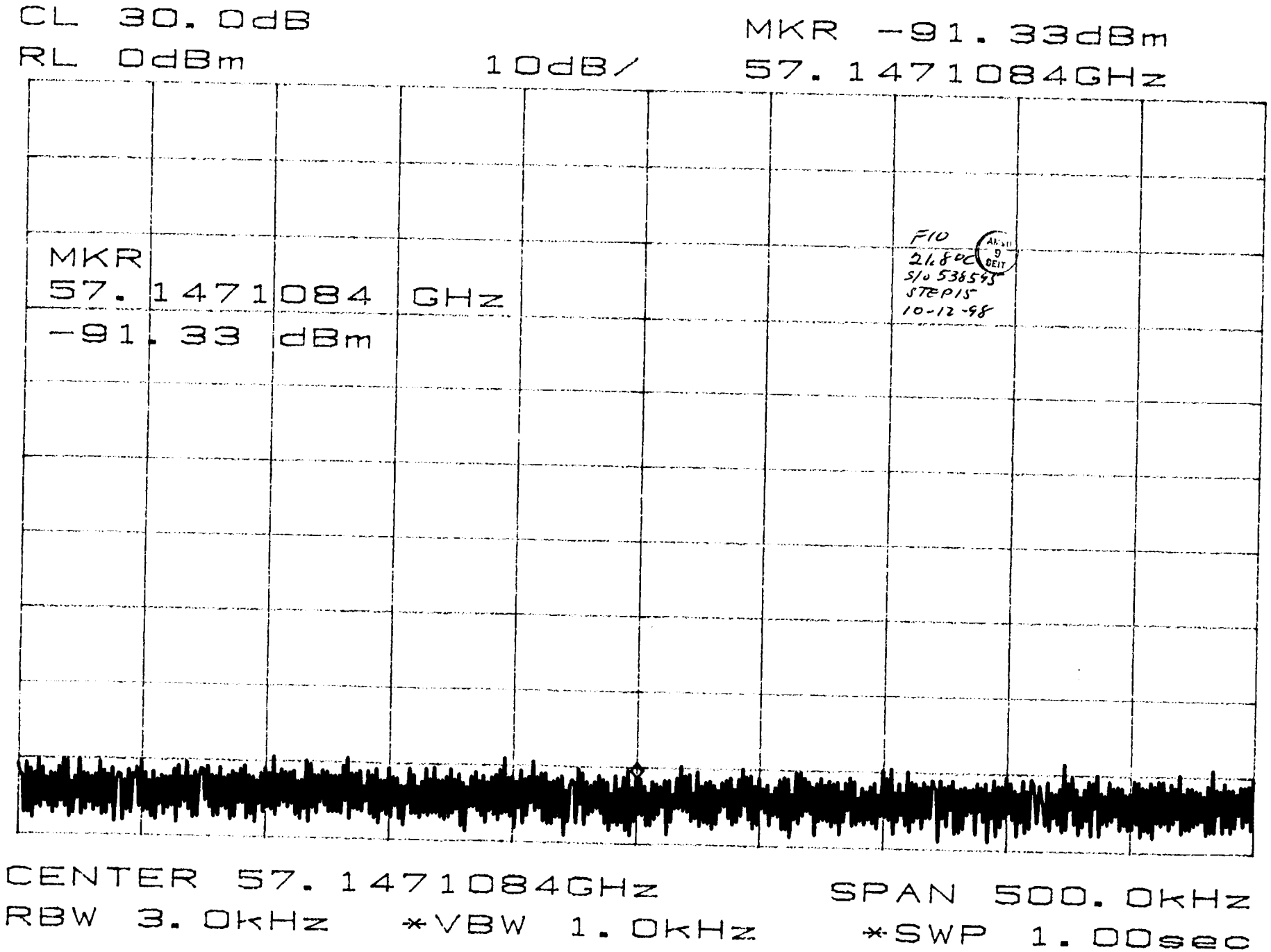
*Record data only if performing test under vacuum


CL 30.0dB
RL 0dBm
10dB/
MKR -3.17dBm
57.29033GHz
MKR
57.29033 GHz
-3.17 dBm
F010
STEP 72
S/O 538595
21.8°C
10-12-98
CENTER 57.29033GHz
SPAN 10.00MHz
*RBW 300kHz
*VBW 300kHz
*SWP 50.0ms

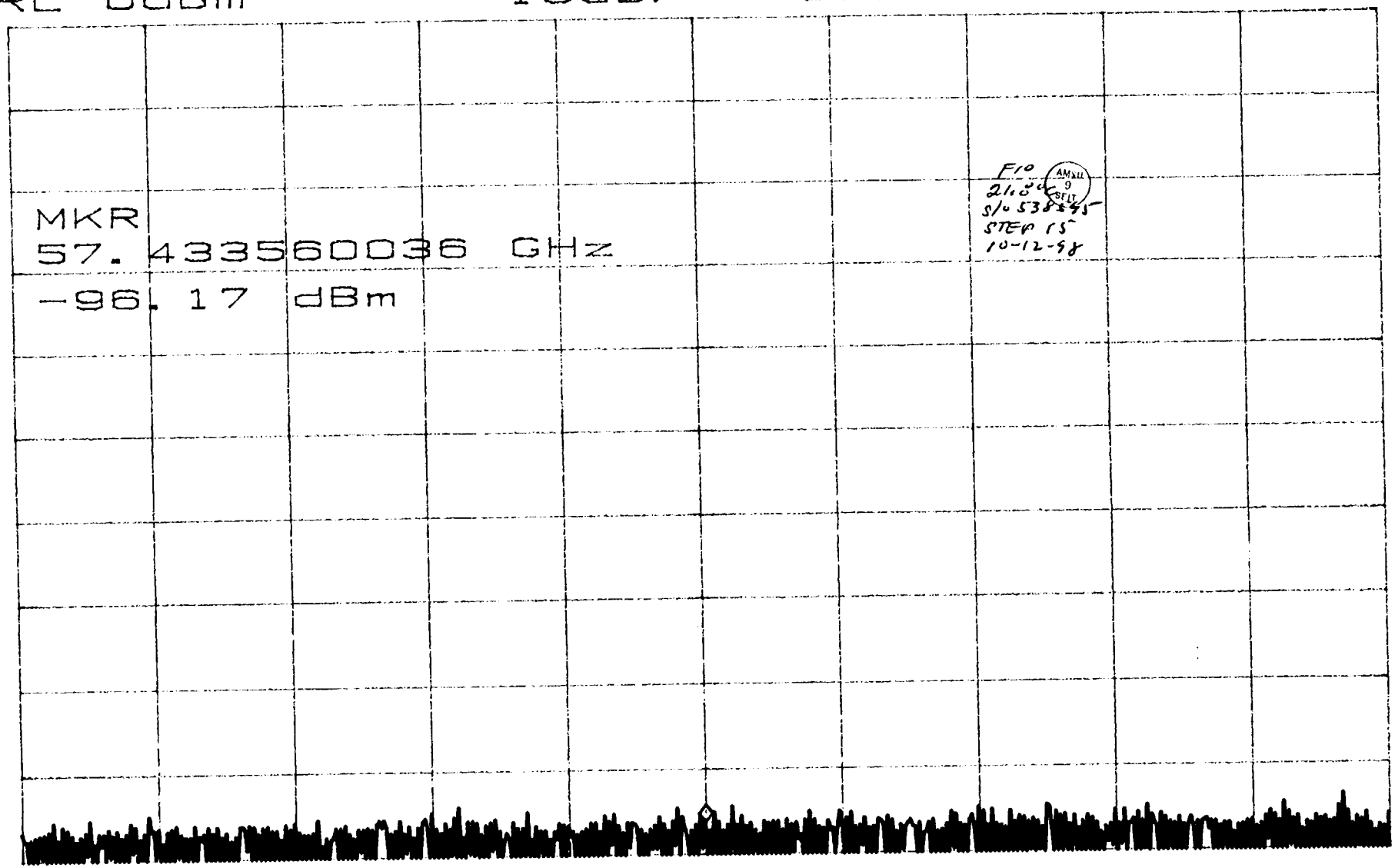

ATTEN 30dB
RL 20.0dBm
10dB/
MKR 12.00dBm
6.87485GHz
MKR
6.87485 GHz
12.00 dBm
F10
STEP 12
S/O 536595
21.8°C
10-12-98
CENTER 6.87483GHz
SPAN 10.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms


CL 30.0dB
RL 0dBm
10dB/
MKR -90.00dBm
56.8607592GHz
MKR
56.8607592 GHz
-90.00 dBm
F10
21.8 dC
STEP 15
S/O 538595
10-12-98
CENTER 56.8607592GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 1.00sec

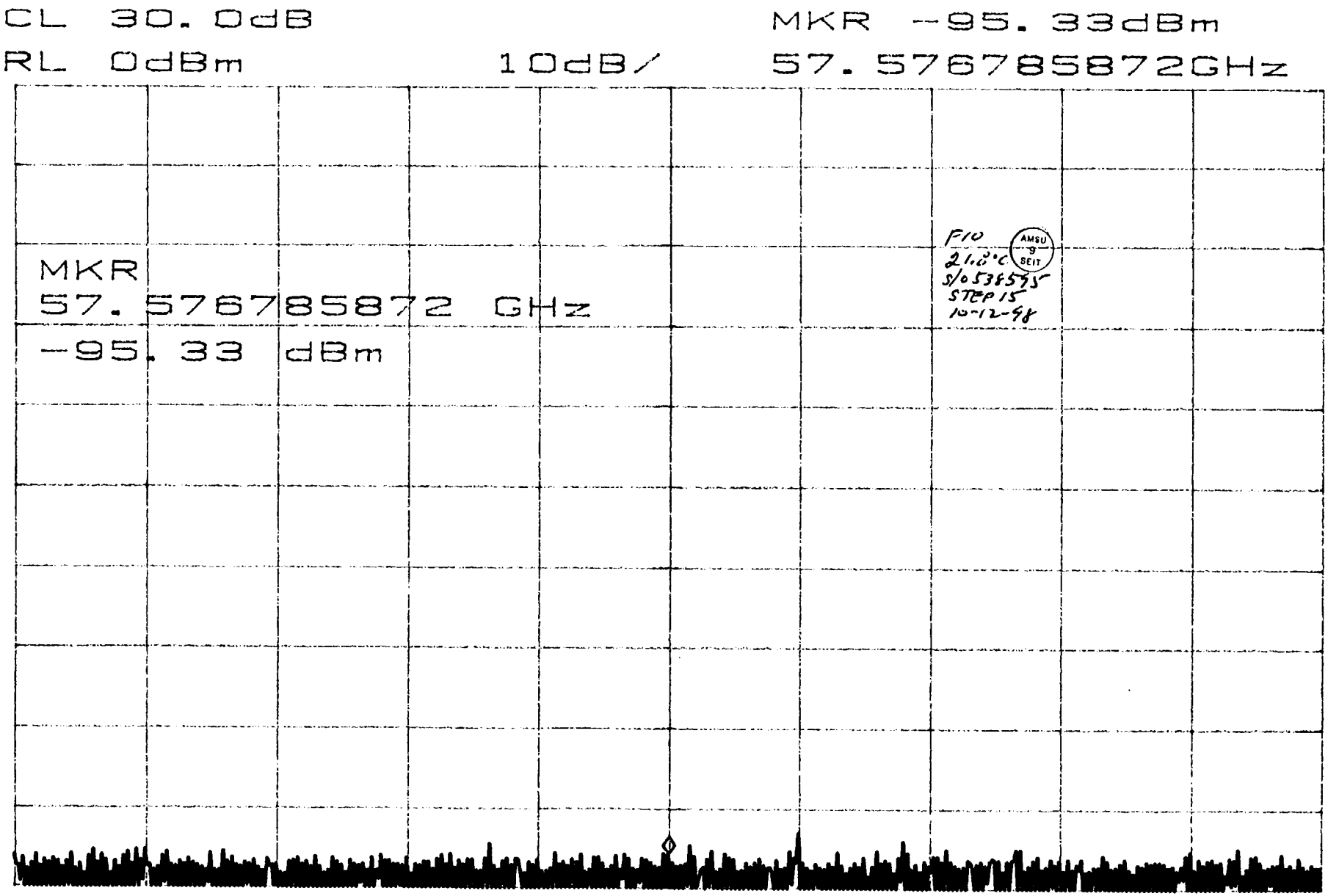

CL 30.0dB
RL 0dBm
10dB/
MKR -91.17dBm
57.0038825GHz
MKR
57.0038825 GHz
-91.17 dBm
F10
21.8°C
S/O 538575T
STEP 15
10-12-98
AMSU 9 BEIT
CENTER 57.0038825GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 1.00sec

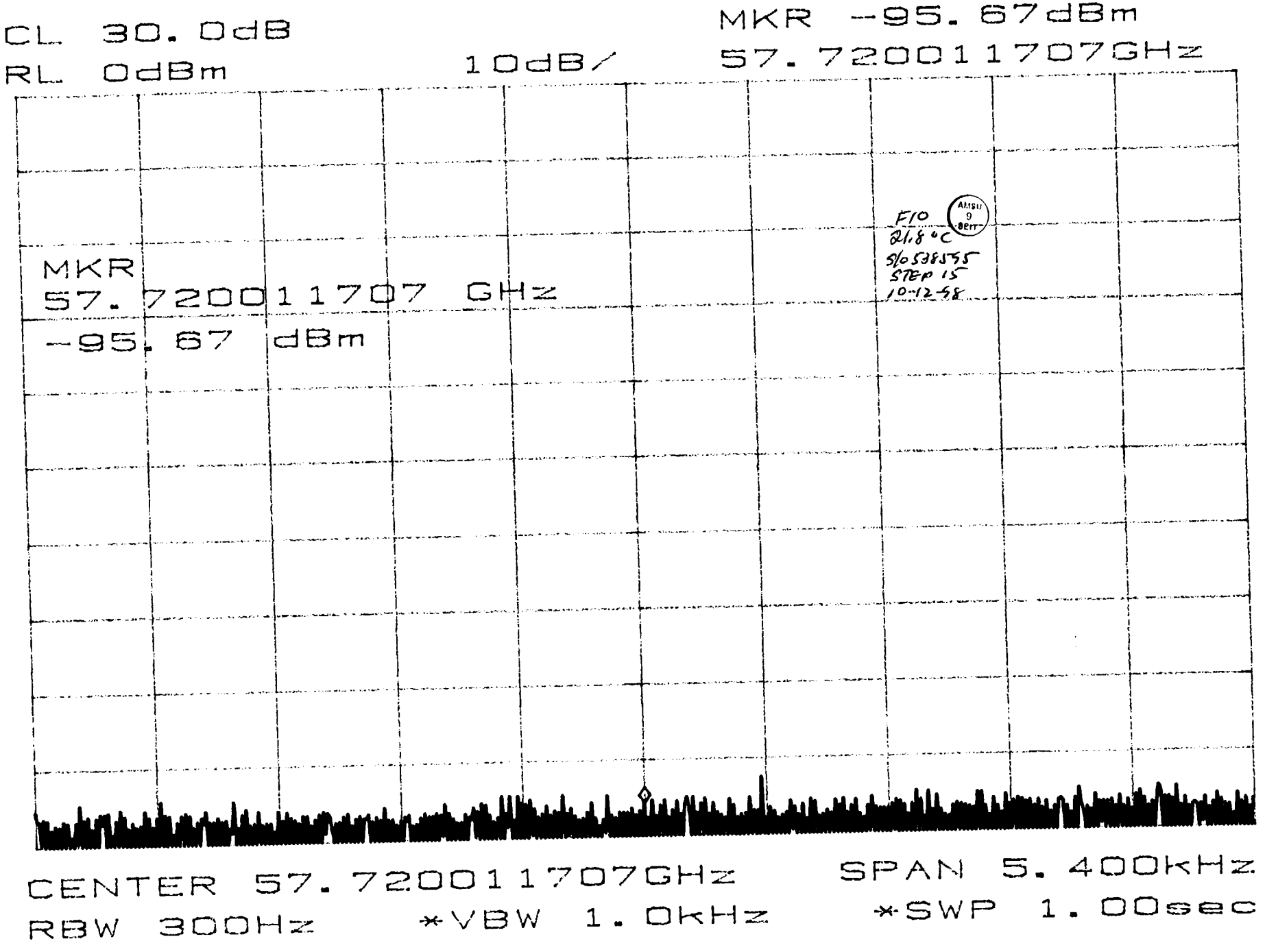

CL 30.0dB
RL 0dBm
10dB/
MKR -91.33dBm
57.1471084GHz
MKR
57.1471084 GHz
-91.33 dBm
F10
21.8°C
S/O 538543
STEP15
10-12-98
CENTER 57.1471084GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 1.00sec

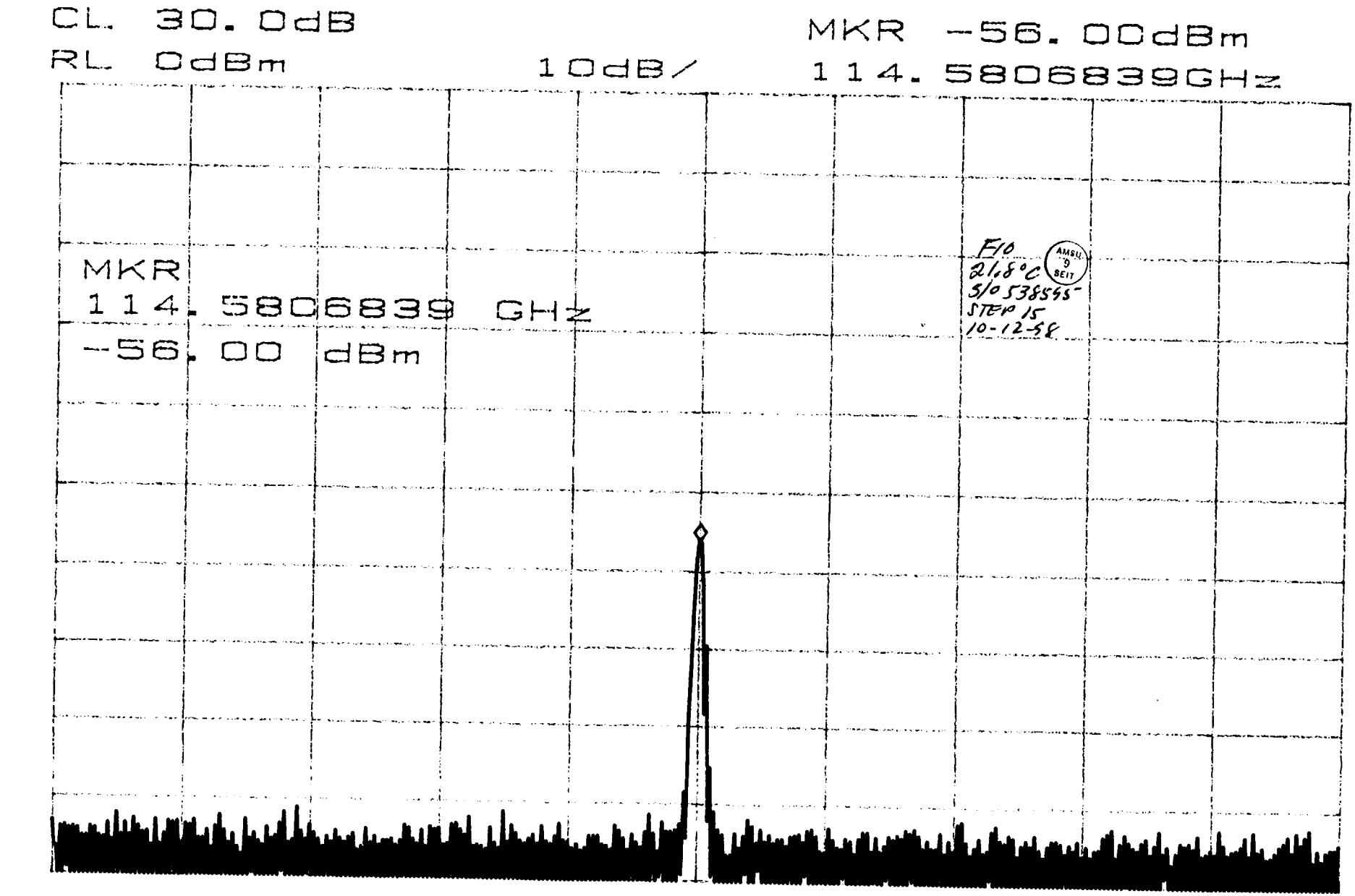
CL 30.0dB
RL 0dBm
10dB/
MKR -96.17dBm
57.433560036GHz

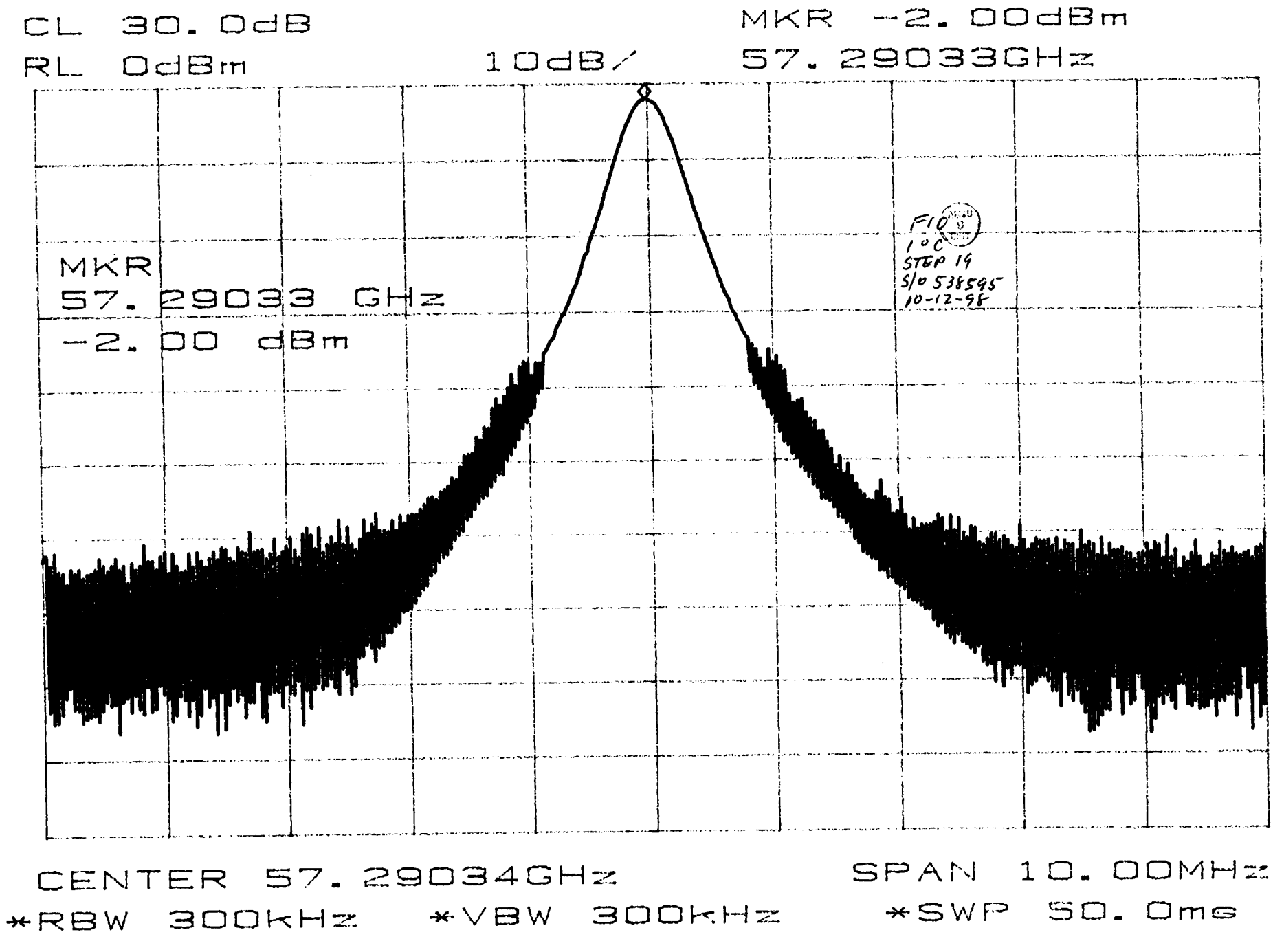


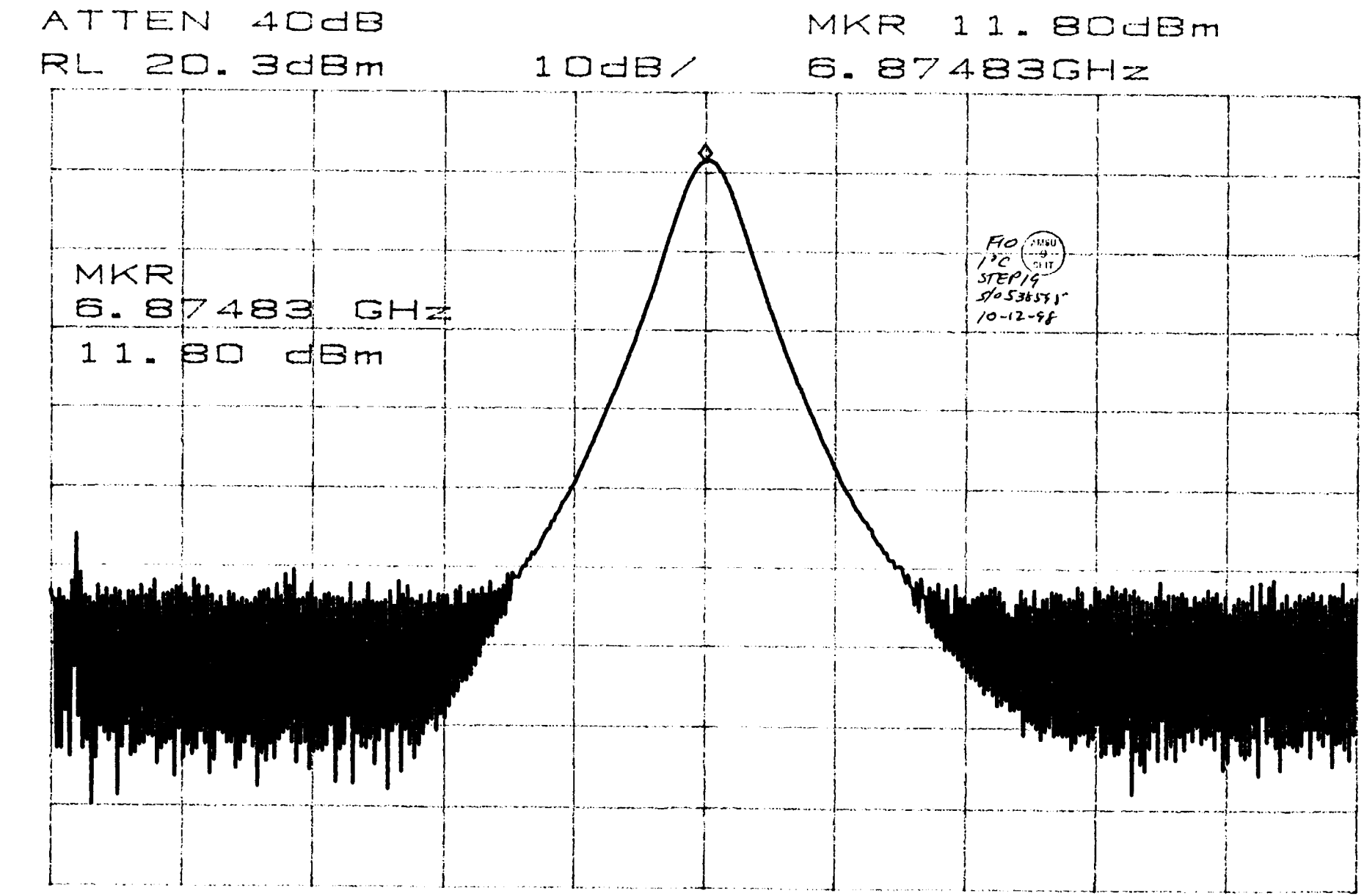
CENTER 57.433560036GHz
SPAN 5.400kHz
RBW 300Hz
*VBW 1.0kHz
*SWP 1.00sec

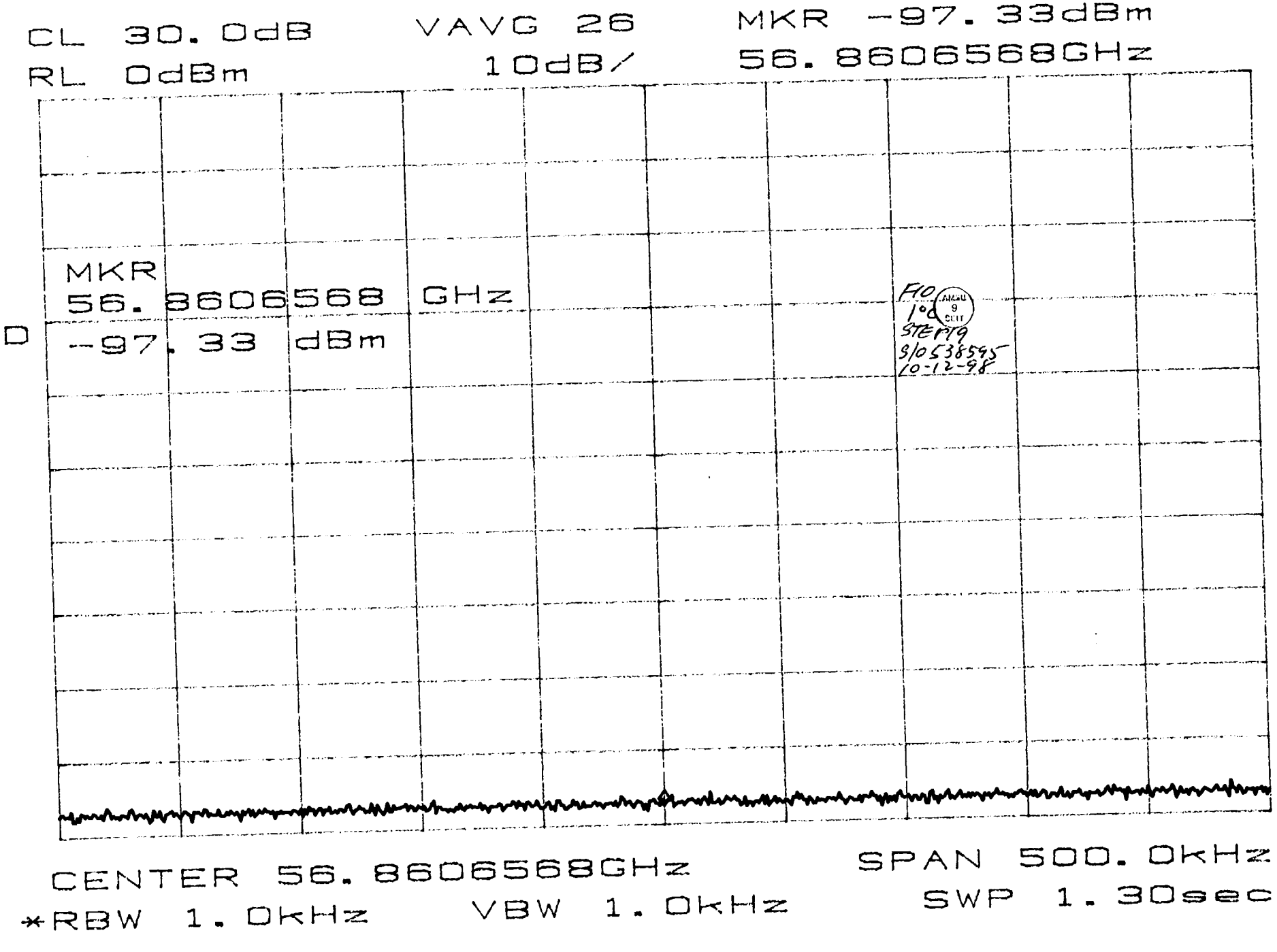

CL 30.0dB
MKR -95.33dBm
RL 0dBm
10dB/
57.576785872GHz
MKR
57.576785872 GHz
-95.33 dBm
F10
21.2°C
S/0538555
STEP 15
10-12-98
AMSU
9
SEIT
CENTER 57.576785872GHz
SPAN 5.400kHz
RBW 300Hz
*VBW 1.0kHz
*SWP 1.00sec

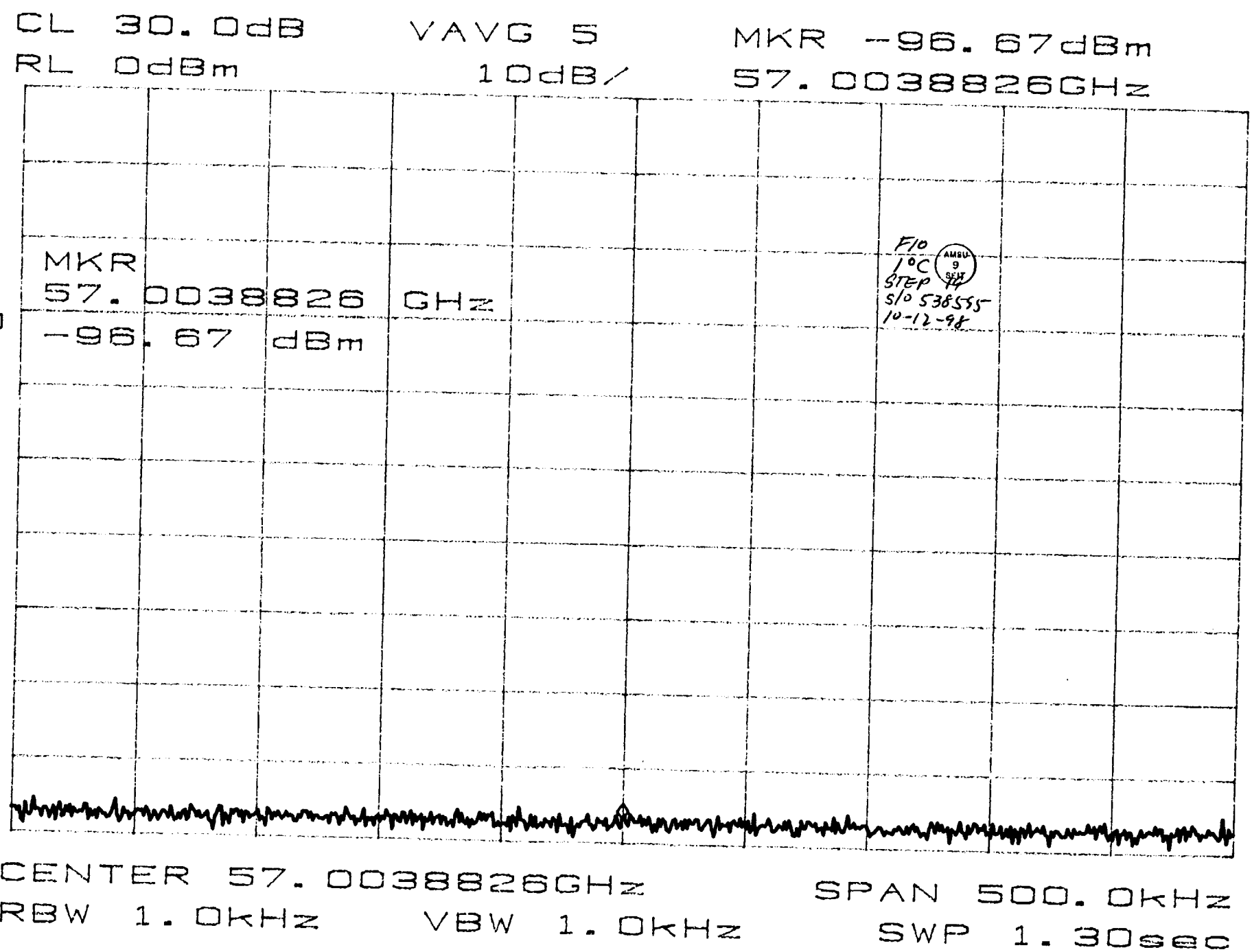

CL 30.0dB
RL 0dBm
10dB/
MKR -95.67dBm
57.720011707GHz
MKR
57.720011707 GHz
-95.67 dBm
F10
21.8°C
S/O 538535
STEP 15
10-12-98
CENTER 57.720011707GHz
SPAN 5.400kHz
RBW 300Hz
*VBW 1.0kHz
*SWP 1.00sec

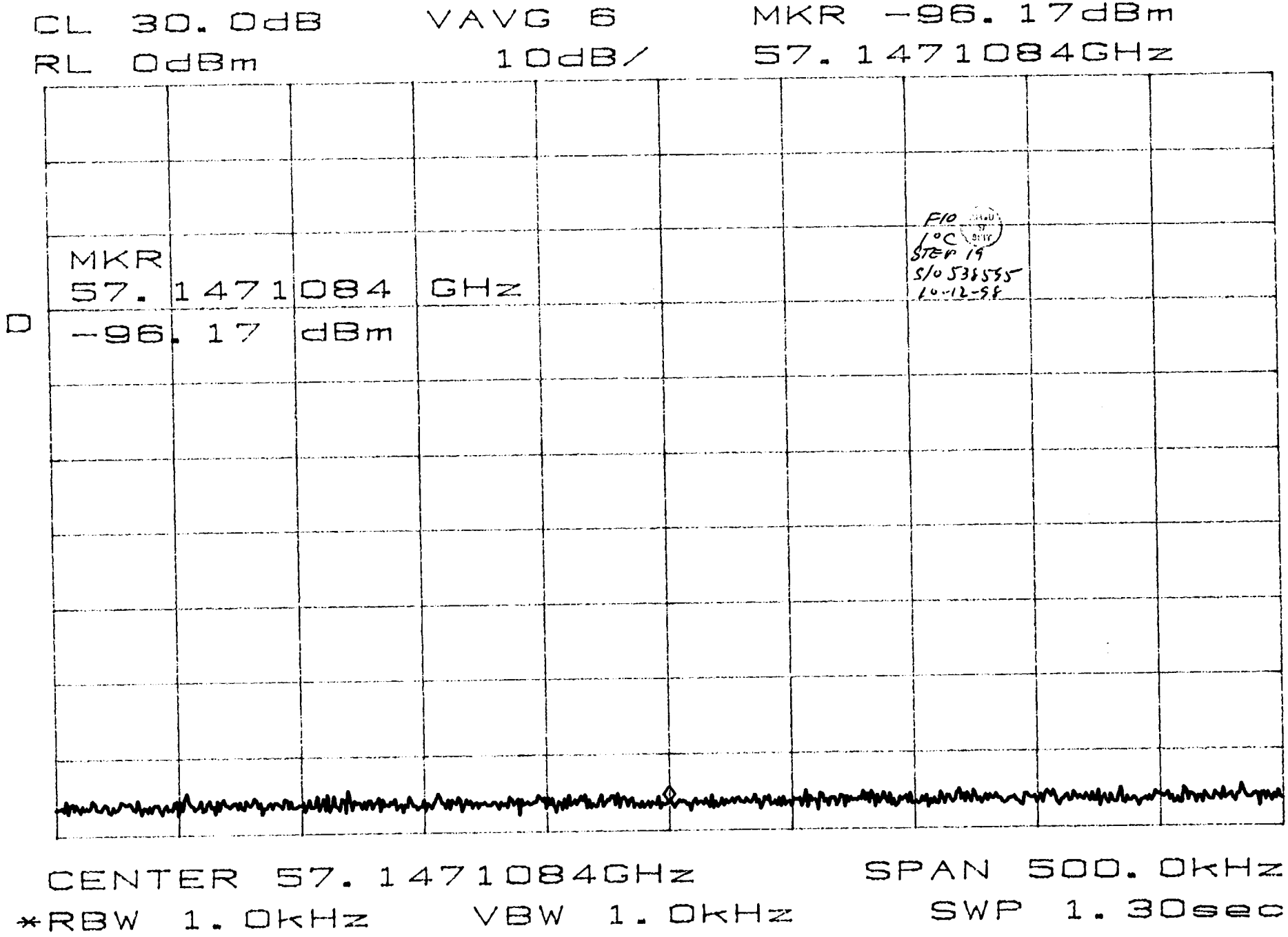

CL 30.0dB
RL 0dBm
10dB/
MKR -56.00dBm
114.5806839GHz
MKR
114.5806839 GHz
-56.00 dBm
F/O
21,8°C
S/O 538545-
STEP 15
10-12-88
CENTER 114.5806839GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

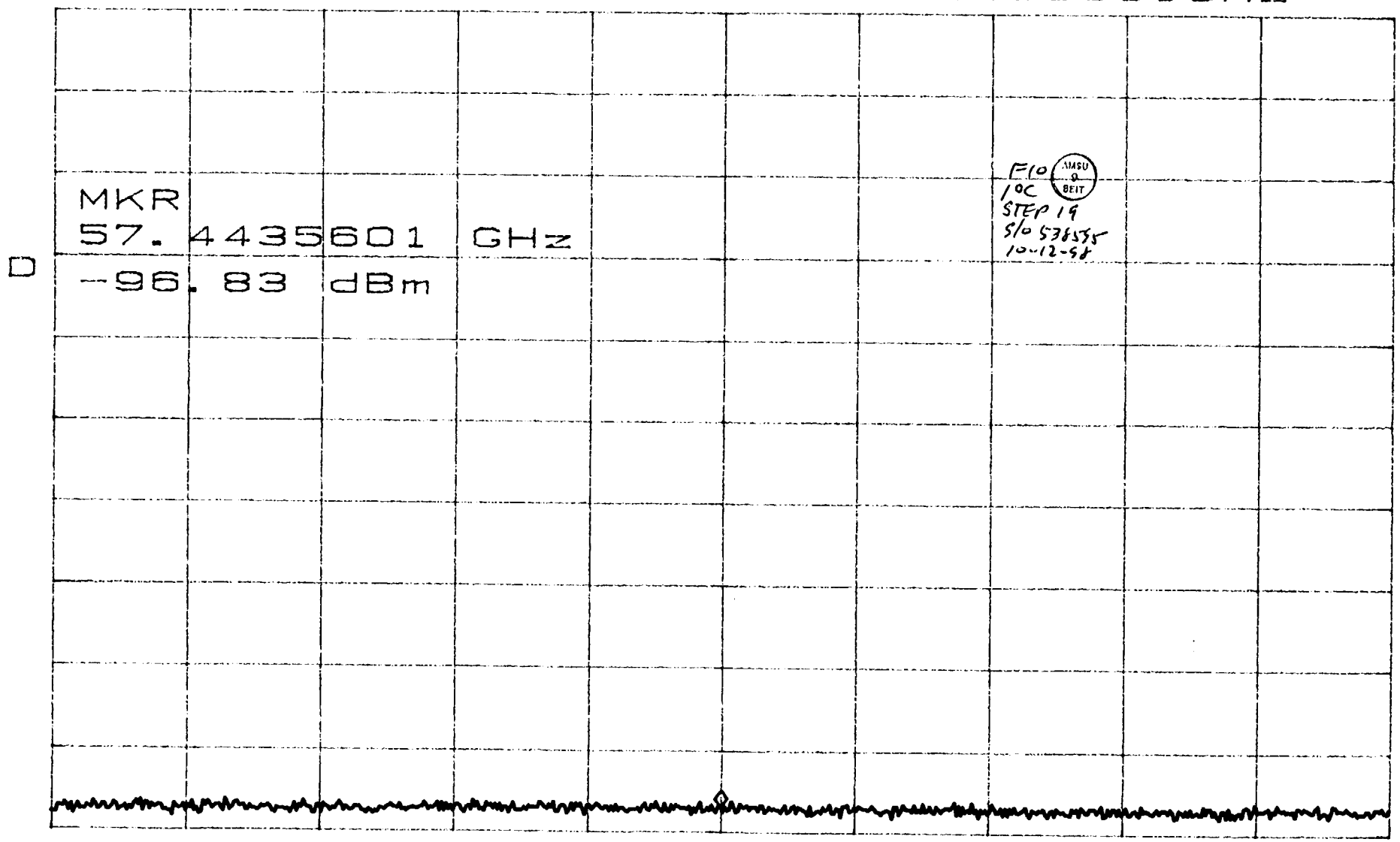

CL 30.0dB
RL 0dBm
10dB/
MKR -2.00dBm
57.29033GHz
MKR
57.29033 GHz
-2.00 dBm
F10
1 0C
STEP 19
S/O 538595
10-12-98
CENTER 57.29034GHz
SPAN 10.00MHz
*RBW 300kHz
*VBW 300kHz
*SWP 50.0ms

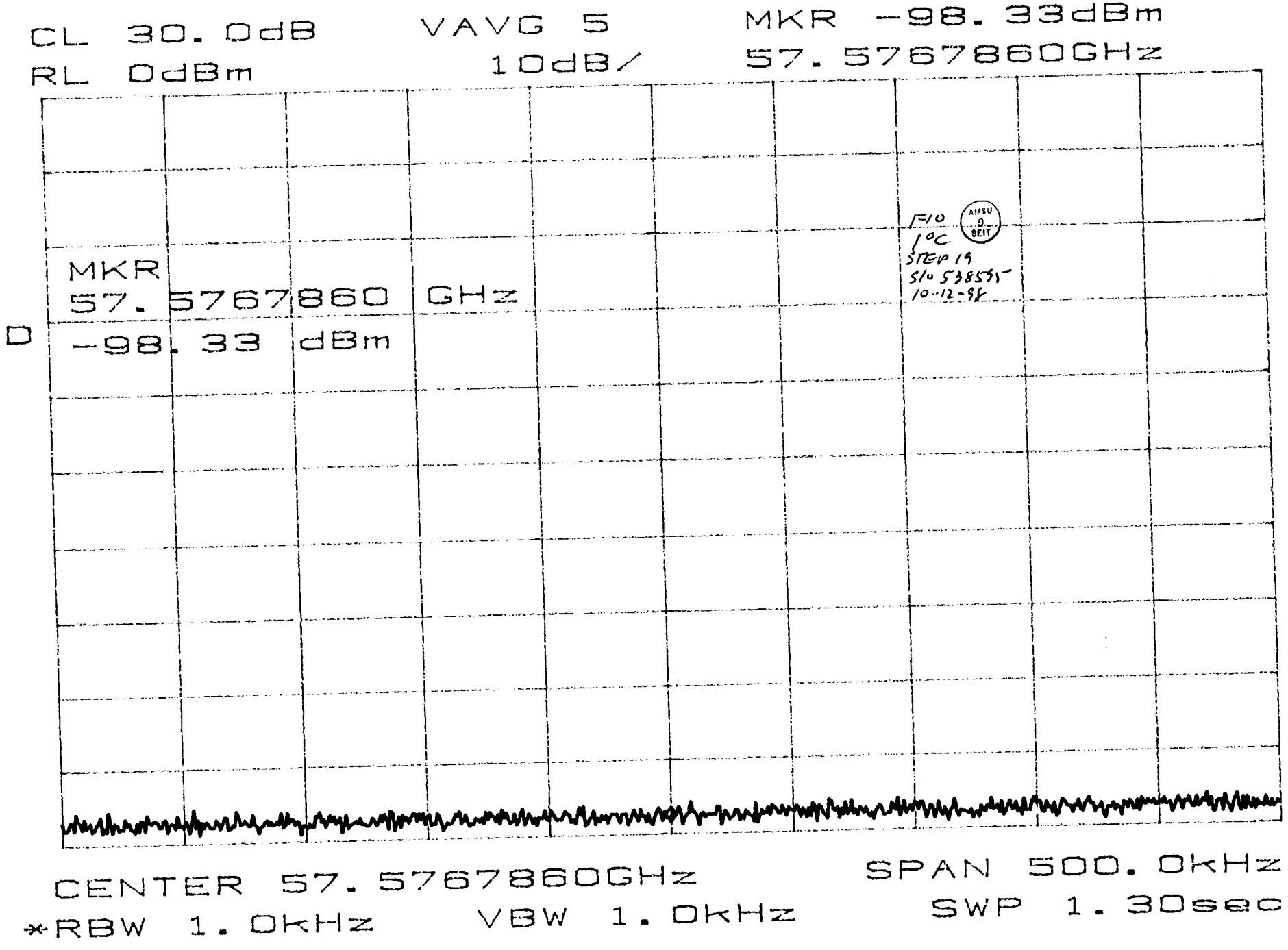

ATTEN 40dB
RL 20.3dBm
10dB/
MKR 11.80dBm
6.87483GHz
MKR
6.87483 GHz
11.80 dBm
FIO
I²C
STEP19
S/O 536573
10-12-98
CENTER 6.87483GHz
SPAN 10.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms

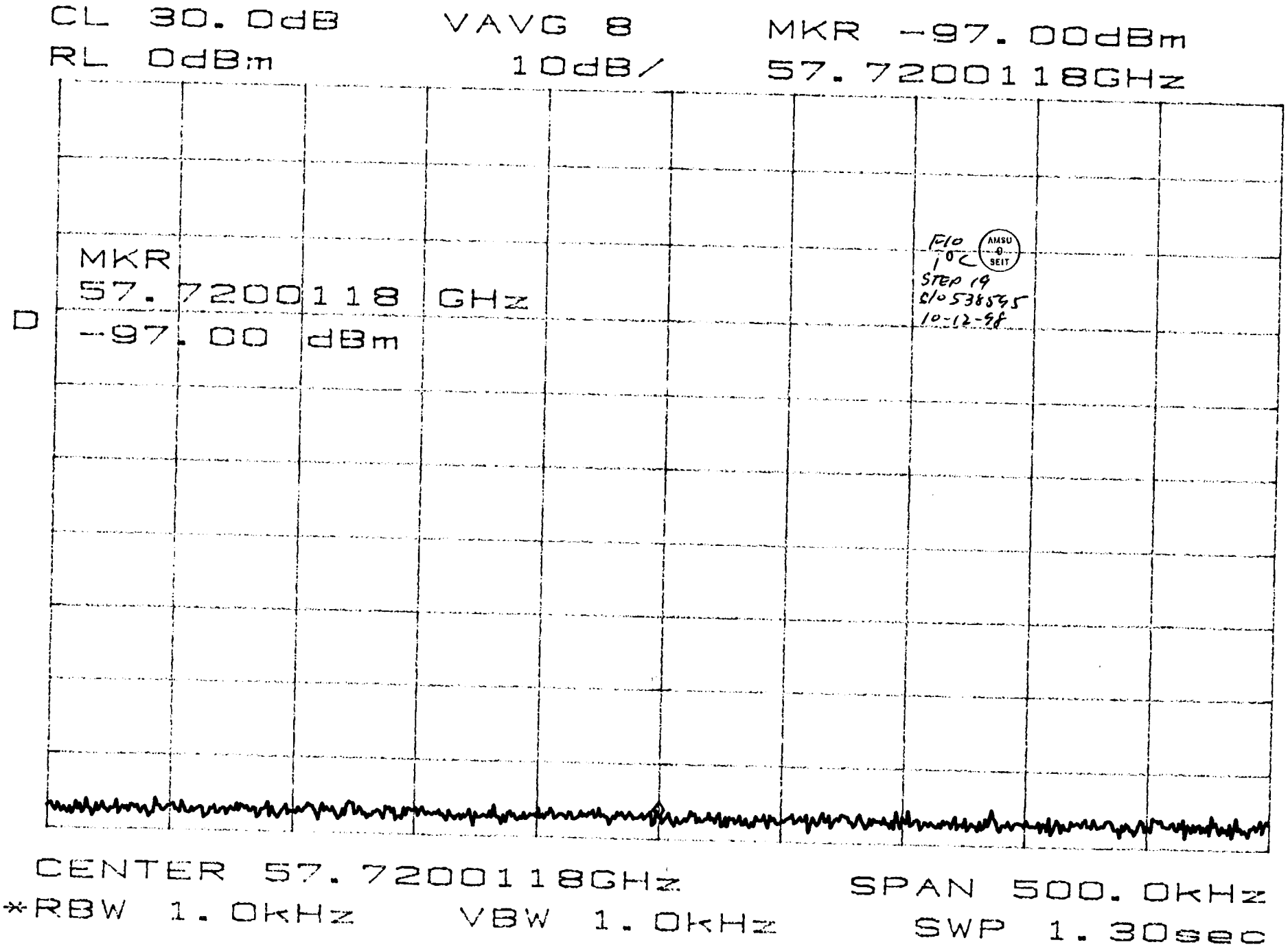

CL 30.0dB
VAVG 26
MKR -97.33dBm
RL 0dBm
10dB/
56.8606568GHz
MKR
56.8606568 GHz
D
-97.33 dBm
F10
1°
STEP19
9/05/38595
10-12-98
CENTER 56.8606568GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec

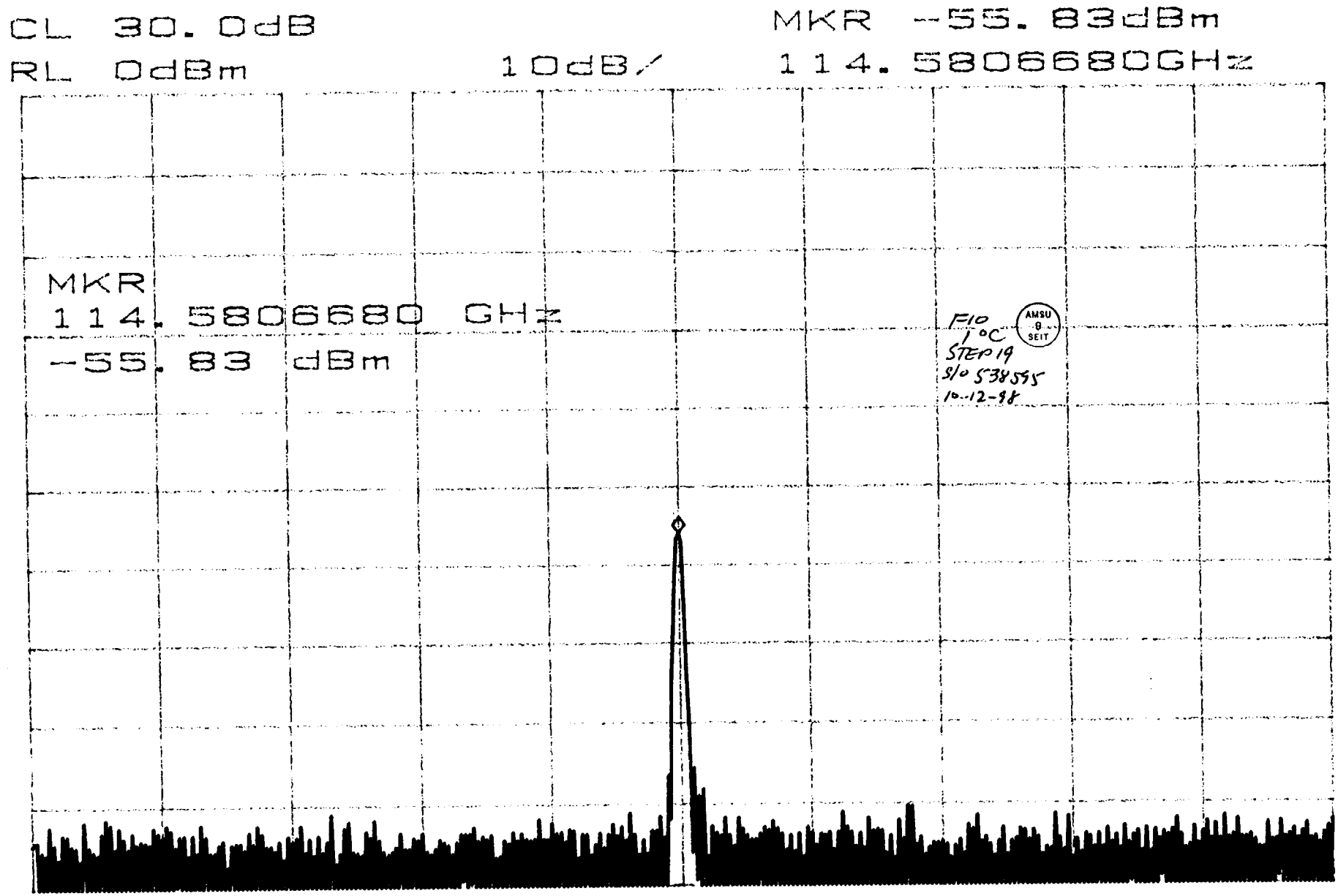

CL 30.0dB
VAVG 5
MKR -96.67dBm
RL 0dBm
10dB/
57.0038826GHz
MKR
57.0038826 GHz
-96.67 dBm
D
F/O
1°C
STEP 11
S/O 538555
10-12-98
AMBU
9
SEPT
CENTER 57.0038826GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec


CL 30.0dB
VAVG 6
MKR -96.17dBm
RL 0dBm
10dB/
57.1471084GHz
MKR
57.1471084 GHz
-96.17 dBm
F10
10°C
STEP 19
S/O 538555
10-12-88
CENTER 57.1471084GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec


CL 30.0dB
VAVG 45
MKR -96.83dBm
RL 0dBm
10dB/
57.4435601GHz
MKR
57.4435601 GHz
-96.83 dBm
D
F10
10C
STEP 19
S/O 538555
10-12-98
CENTER 57.4435601GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec


CL 30.0dB
VAVG 5
MKR -98.33dBm
RL 0dBm
10dB/
57.5767860GHz
MKR
57.5767860 GHz
D
-98.33 dBm
F10
10C
STEP 19
S/N 538551
10-12-98
AMSU
9
SEIT
CENTER 57.5767860GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec


CL 30.0dB
VAVG 8
MKR -97.00dBm
RL 0dBm
10dB/
57.7200118GHz
MKR
57.7200118 GHz
-97.00 dBm
D
F10
10C
STEP 19
C/O 538545
10-12-98
AMSU
0
SEIT
CENTER 57.7200118GHz
SPAN 500.0kHz
*RBW 1.0kHz
VBW 1.0kHz
SWP 1.30sec


CL 30.0dB
RL 0dBm
10dB/
MKR -55.83dBm
114.5806680GHz
MKR
114.5806680 GHz
-55.83 dBm
F10
1 °C
STEP 19
S/O 538595
10-12-98
AMSU
θ
SEIT
CENTER 114.5806680GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

TEST DATA SHEET 6A (Sheet 2 of 4)
Functional Testing (Paragraph 4.2.1)

Pre-Environmental CPT

Paragraph 4.2.1.3 (Cont):

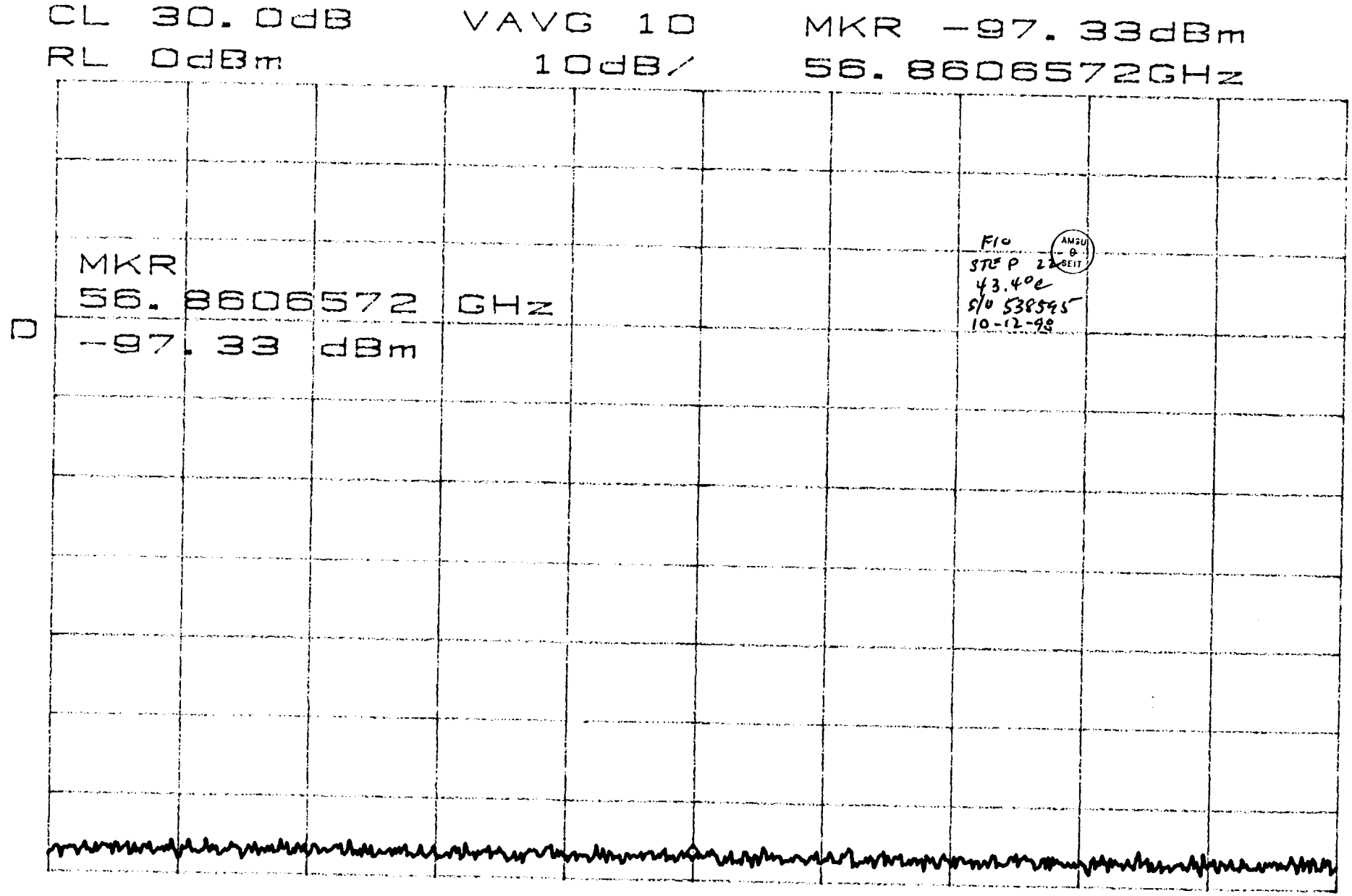
Step	Test	Expected	Measured	Pass/Fail
14	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	Pass
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.290342 GHz	
		17 to 20 dBm	P = 18.47 dBm	
15	Spurious and Sub	-200 to -90 dBc	see plots	
16	Power level of 114.58 GHz signal	<-10 dBm	-56 dBm	Pass
17	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 6 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .5 dB dB Peak	N/A
18	Operating Temperature @ 1°C baseplate	TC1 = 1 ±2°C	TC1 = 1.0	Pass
			TC2 = 2.5	N/A
			TC3 = 1.0	N/A
		0 - 1V	DRO L/A = 44 mV	Pass
		~~0 - 1V~~ 4.3-4.7V	PLO L/A = 4.54 V	Pass
19	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 519 mA	
	IM2 Current	100 mA max.	IM2 = -65 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 44 mV	
	PLO L/A Voltage	~~0 to 1V~~ 4.3-4.7V	PLO L/A = 4.54 V	
	RF Output Power	17 to 20 dBm	Power = 19.36 dBm	
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290334 28 GHz	
	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290334166 GHz	
		17 to 20 dBm	Power = 19.35 dBm	
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 5.290333951 GHz	
		17 to 20 dBm	Power = 19.35 dBm	Pass

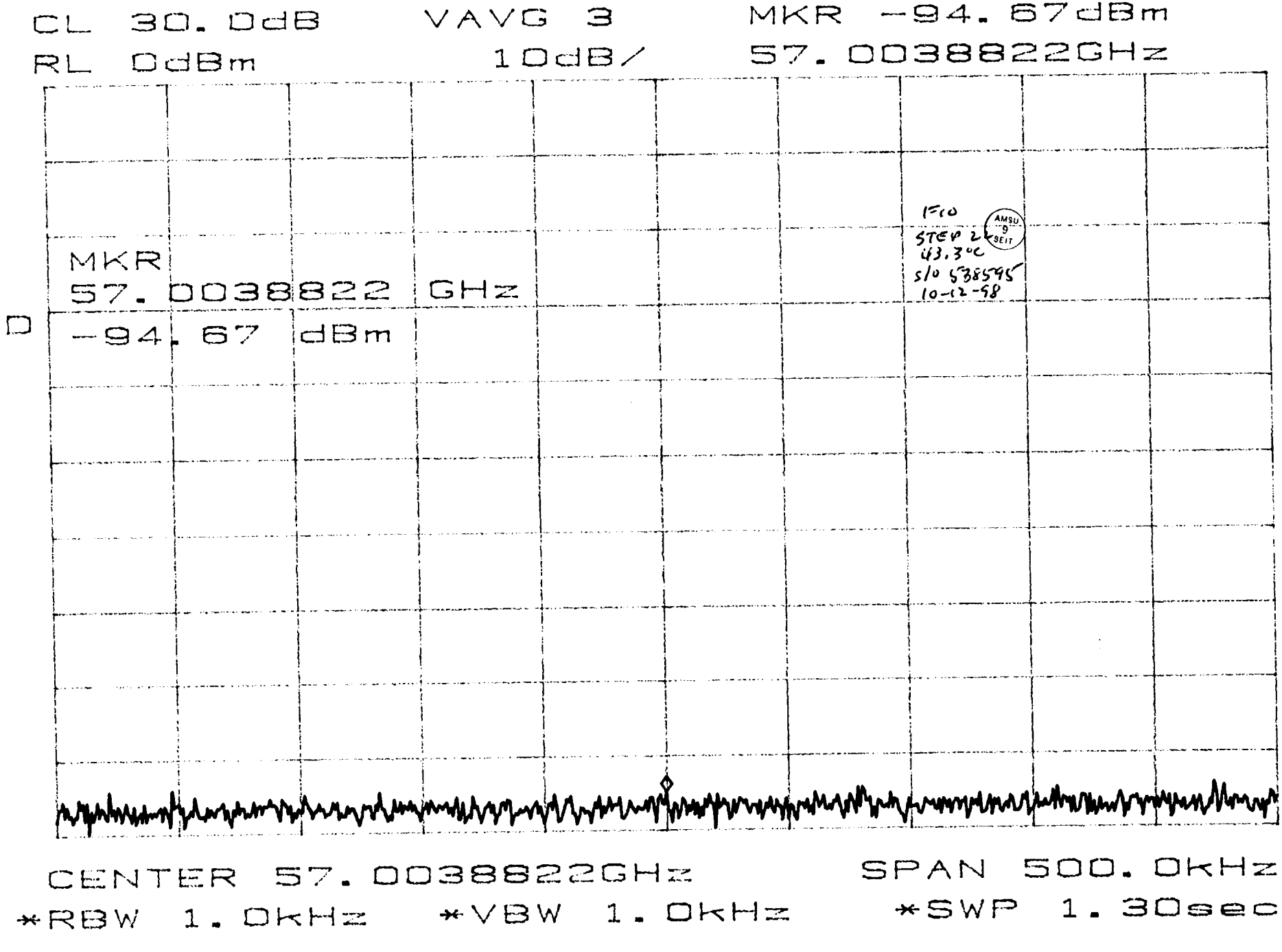
TEST DATA SHEET 6A (Sheet 3 of 4)
Functional Testing (Paragraph 4.2.1)

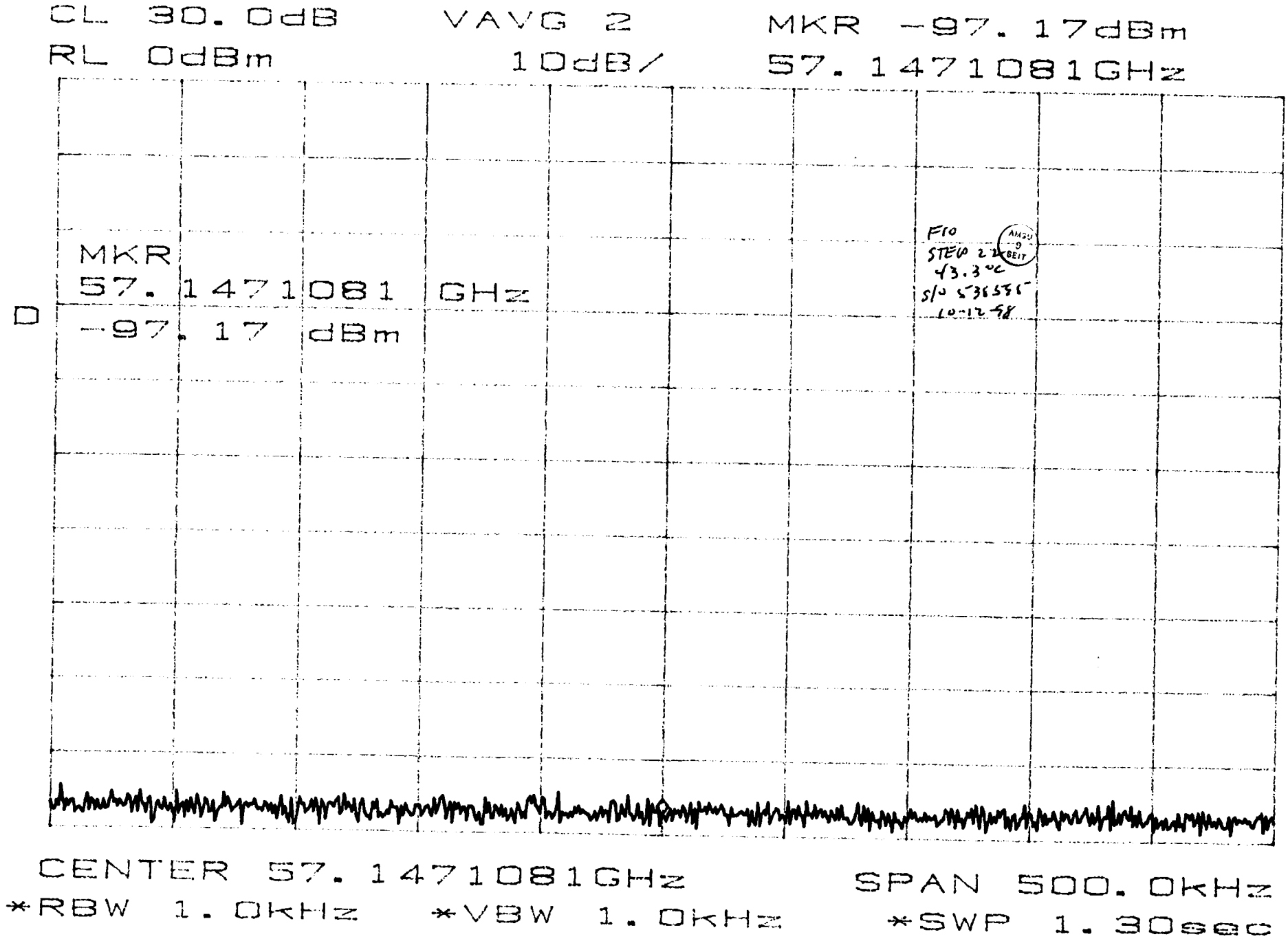
Pre-Environmental CPT

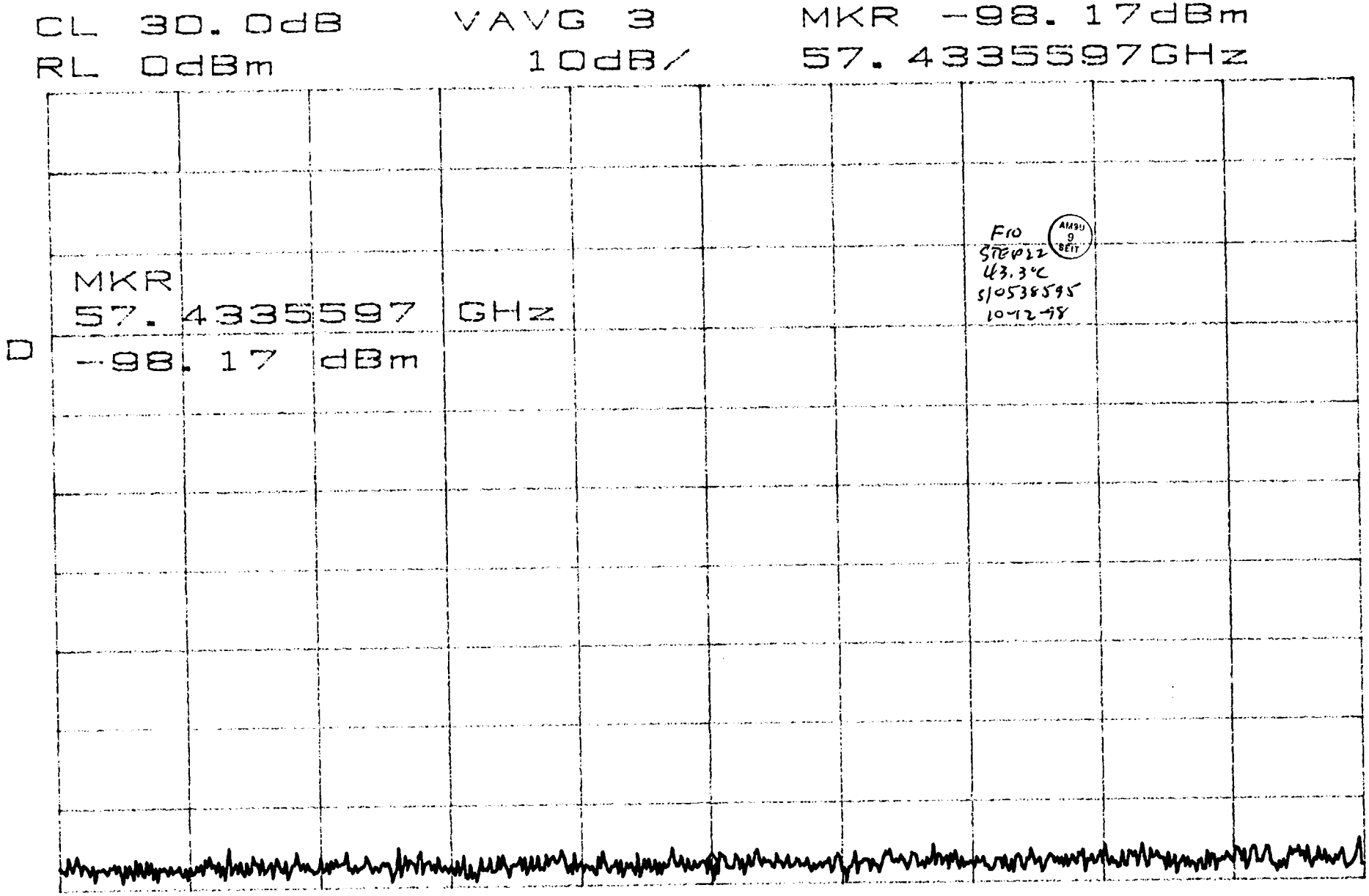
Paragraph 4.2.1.3 (Cont):

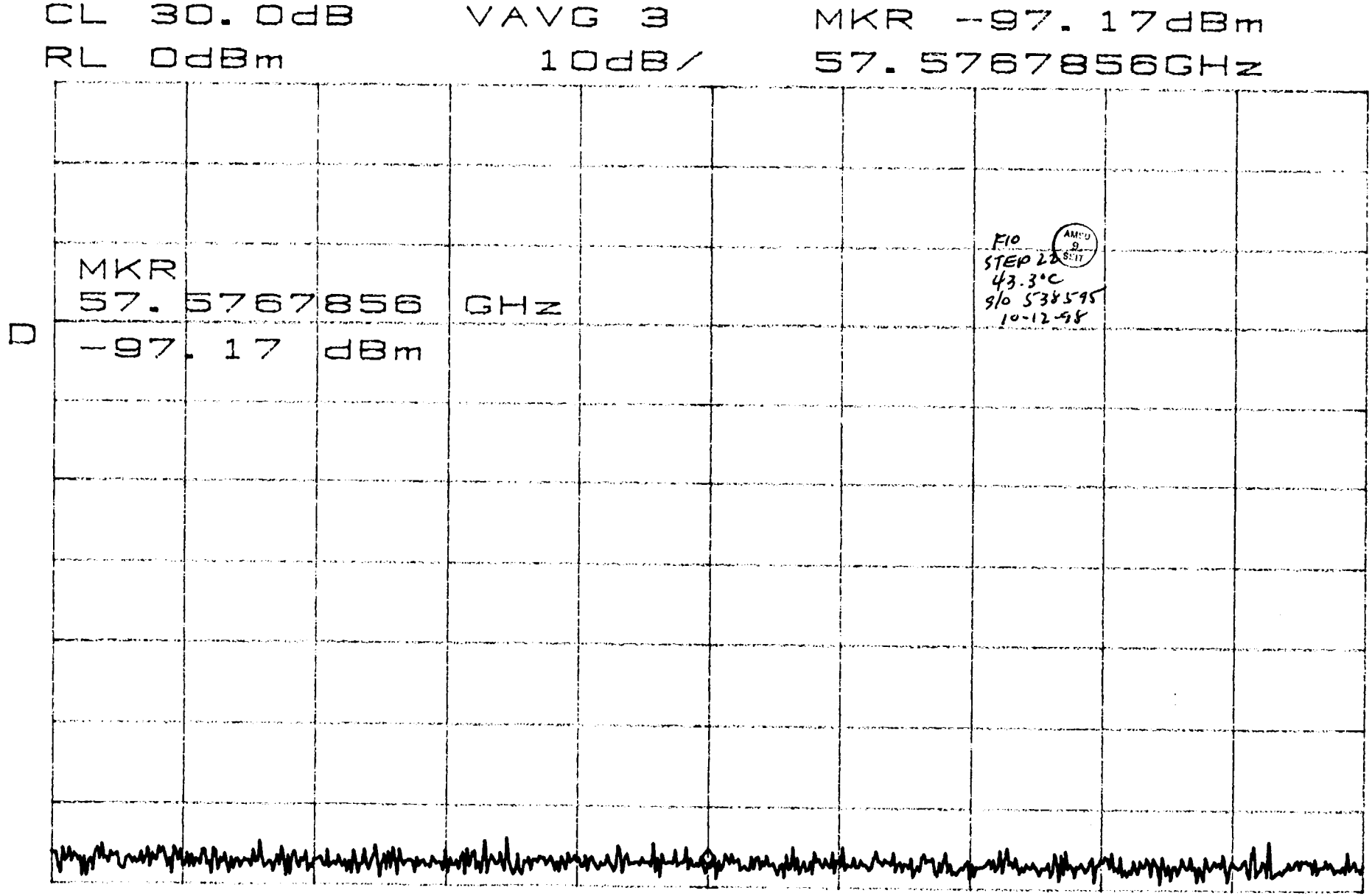
Step	Test	Expected	Measured	Pass/Fail
19 (Cont)	Spurious and Sub	-200 to -90 dBc	see plots	Pass
	Power level of 114.58 GHz signal	<-10 dBm	-55.8 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 6 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .38 dB	N/A
21	Operating Temperature @ +44°C Baseplate	TC1 = 44 ±2°C	TC1 = 43.3	
			TC2 = 44.0	N/A
			TC3 = 43.0	N/A
		0 - 1V	DRO L/A = 111 mV	Pass
		~~0 - 1V~~ 4.3-4.7V	PLO L/A = 4.52 V	
22	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 542 mA	
	IM2 Current	100 mA max.	IM2 = -68.7 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 111 mV	
	PLO L/A Voltage	~~0 to 1V~~ 4.3-4.7V	PLO L/A = 4.52 V	
	RF Output Power and	17 to 20 dBm	Power = 17.54 dBm	
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290333903 GHz	
	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290334133 GHz	
		17 to 20 dBm	Power = 17.53 dBm	
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.290334186 GHz	
		17 to 20 dBm	Power = 17.54 dBm	Pass

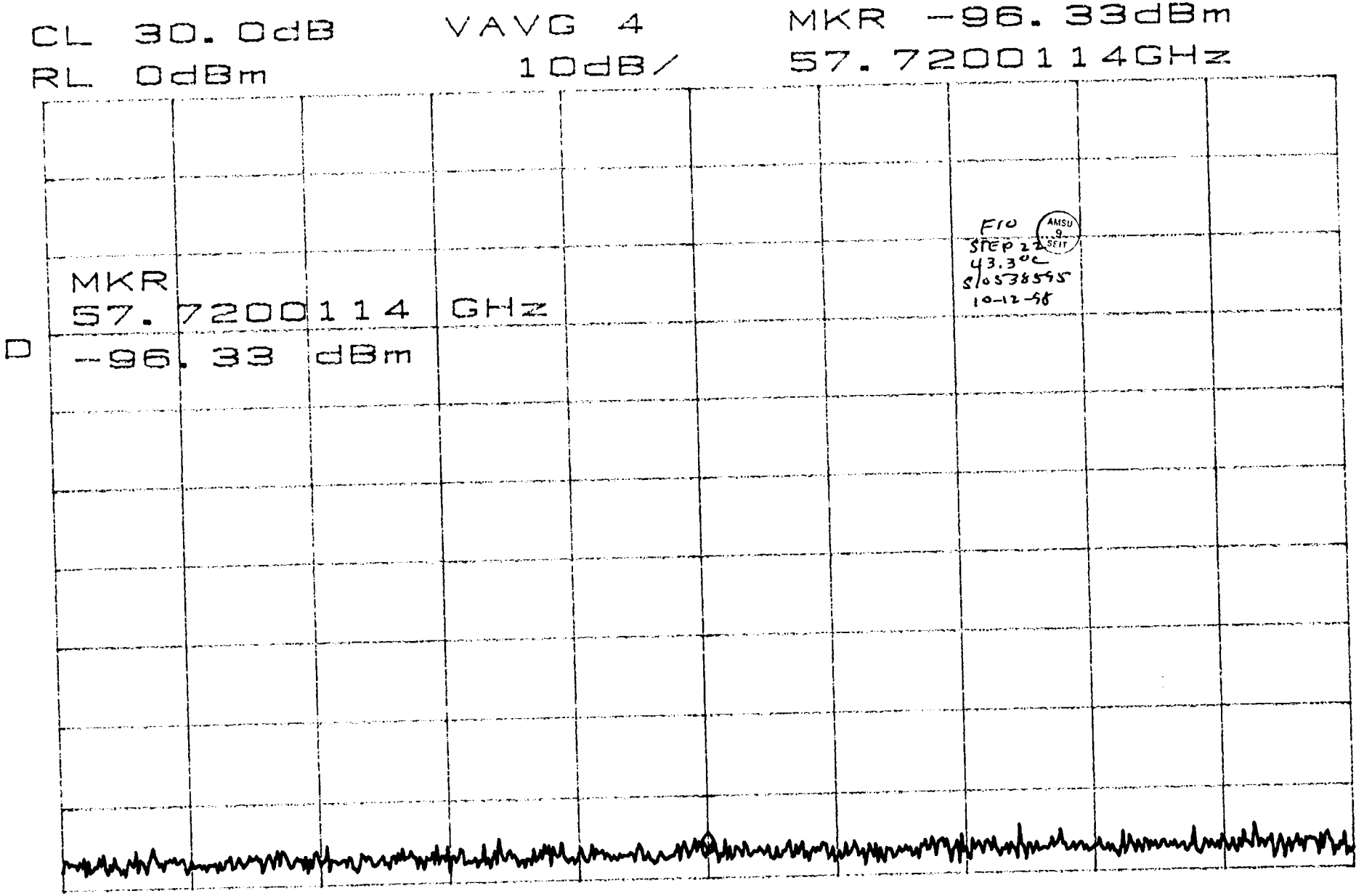

CL 30.0dB
VAVG 10
MKR -97.33dBm
RL 0dBm
10dB/
56.8606572GHz
MKR
56.8606572 GHz
-97.33 dBm
D
F10
STEP 22
43.40e
S/O 538545
10-12-98
CENTER 56.8606572GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec

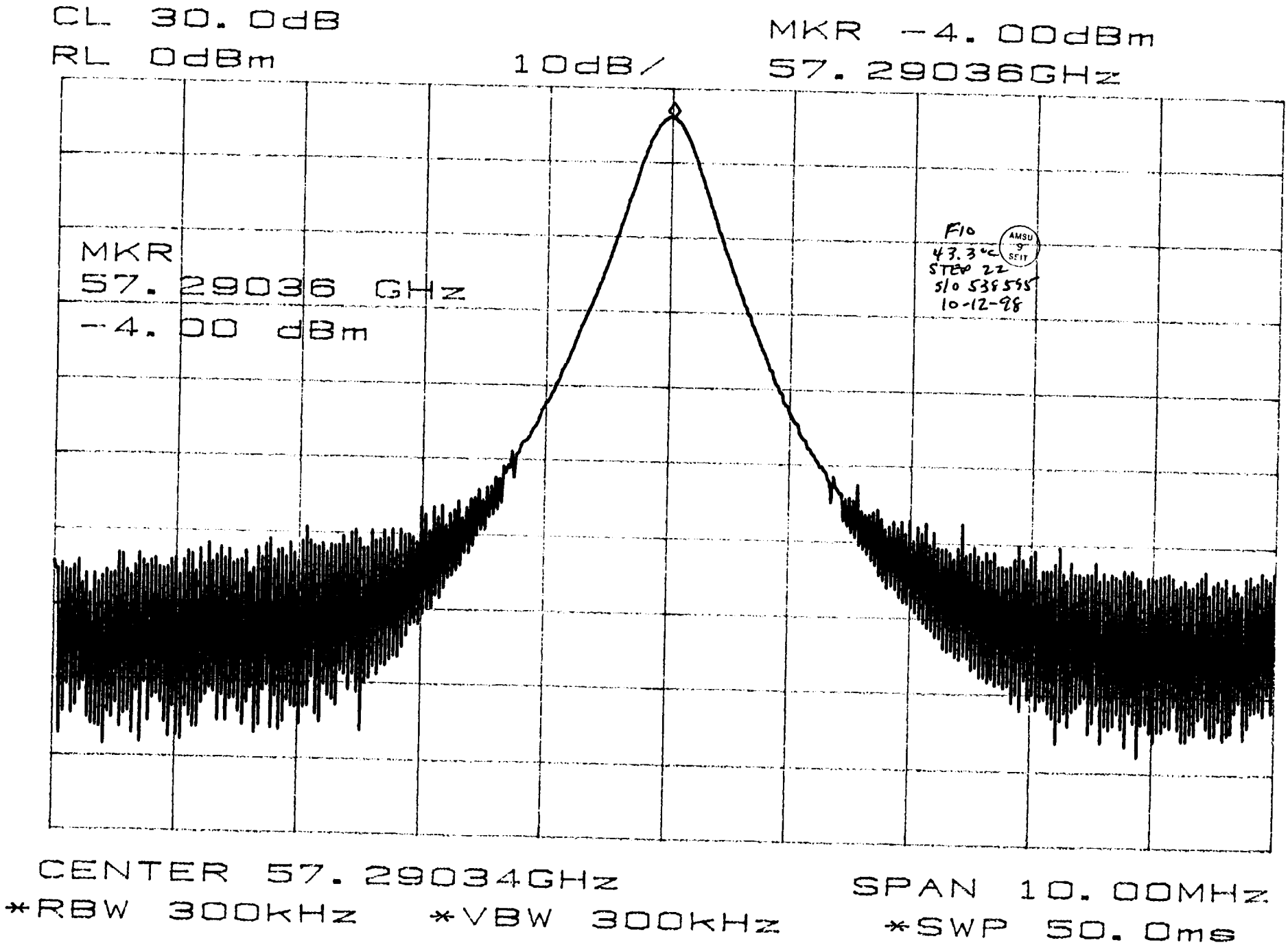

CL 30.0dB
VAVG 3
MKR -94.67dBm
RL 0dBm
10dB/
57.0038822GHz
MKR
57.0038822 GHz
D
-94.67 dBm
IF10
STEP 2
43.3°C
s/o 5385495
10-12-98
CENTER 57.0038822GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec

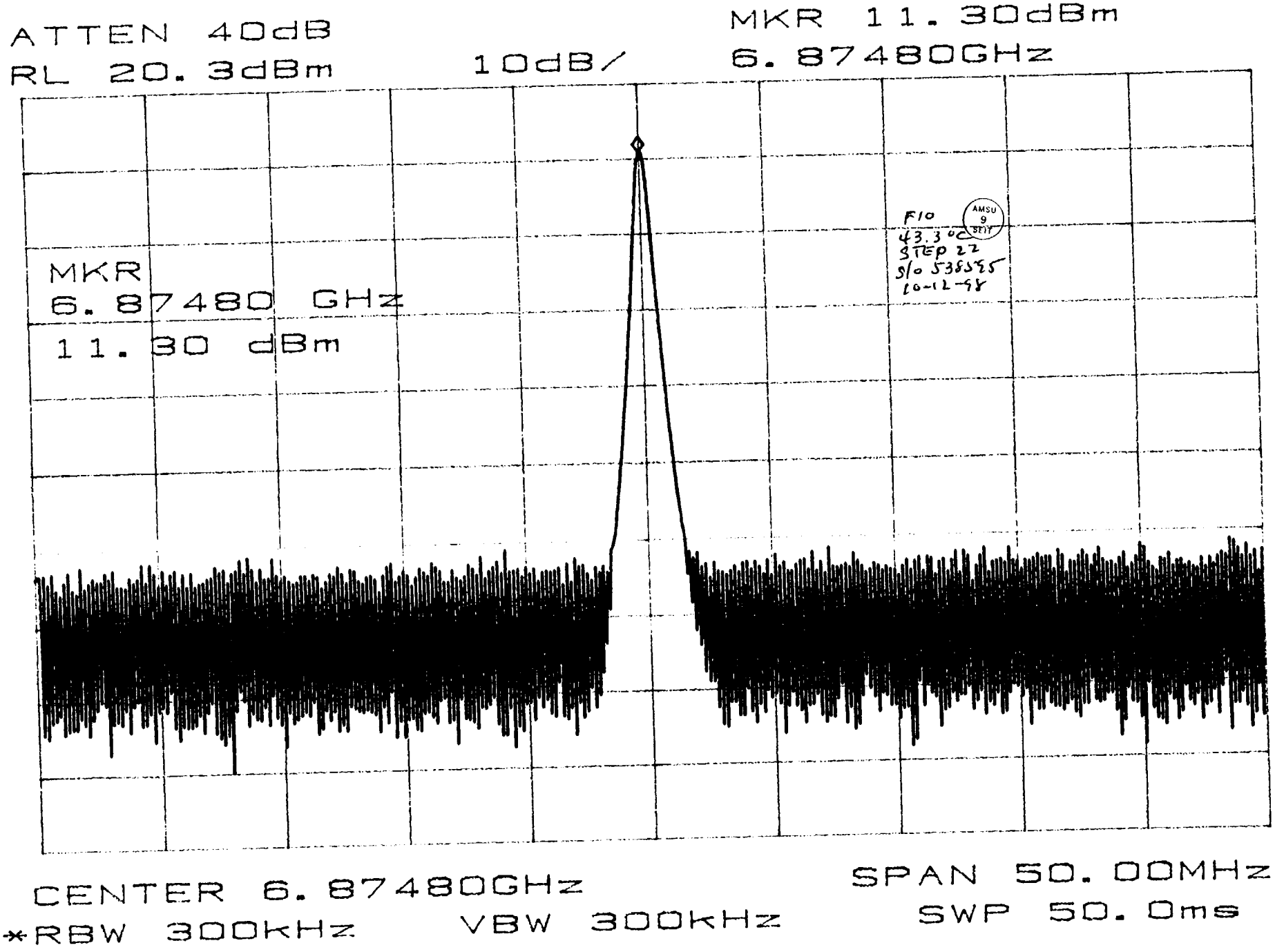

CL 30.0dB
VAVG 2
MKR -97.17dBm
RL 0dBm
10dB/
57.1471081GHz
MKR
57.1471081 GHz
-97.17 dBm
D
FIO
STEP 2
43.3°C
S/O 536585
10-12-98
CENTER 57.1471081GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec

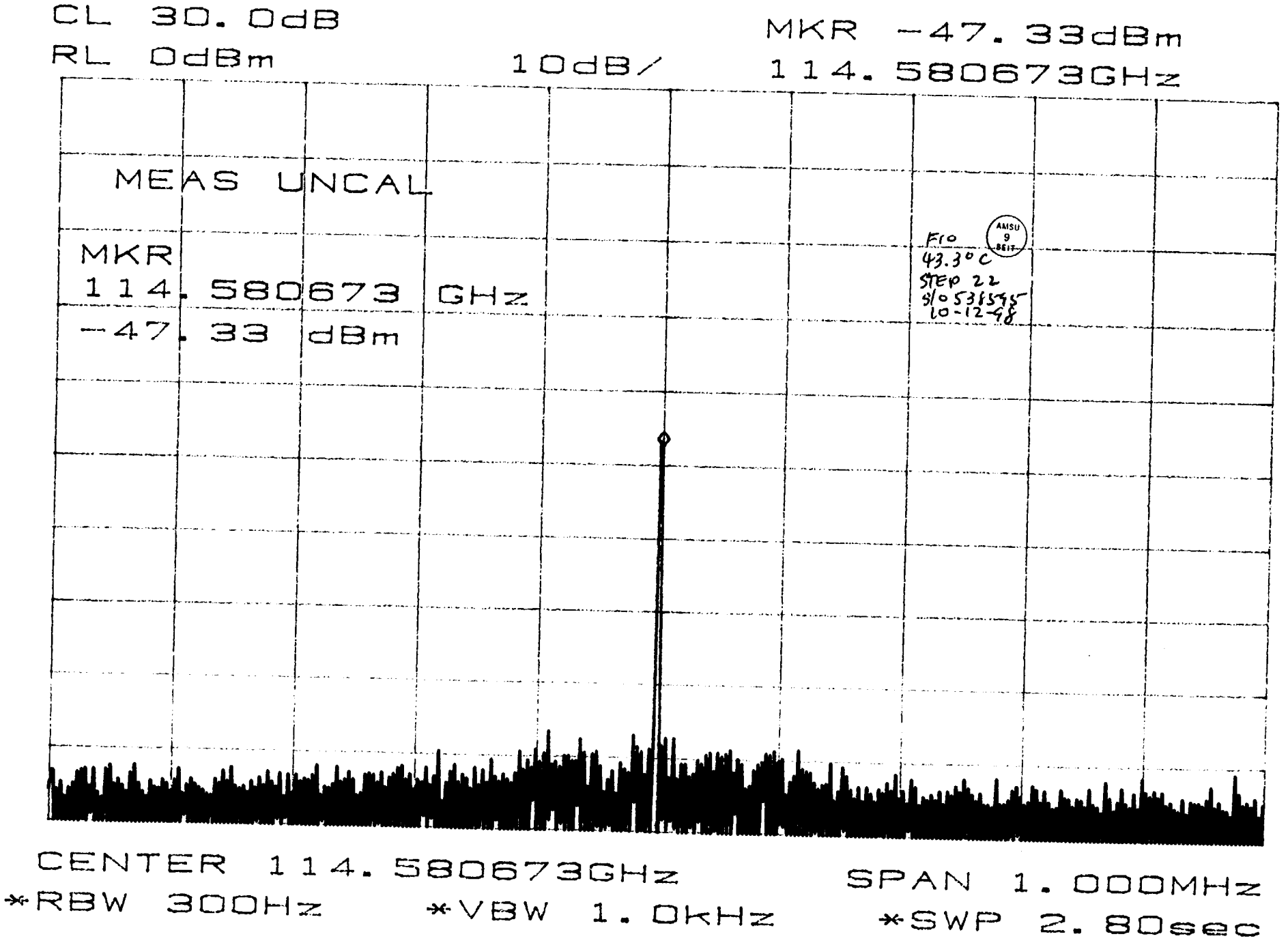

CL 30.0dB
VAVG 3
MKR -98.17dBm
RL 0dBm
10dB/
57.4335597GHz
MKR
57.4335597 GHz
-98.17 dBm
D
Fro
Step22
43.3°C
5/0538595
10-12-98
AM3U
9
BEIT
CENTER 57.4335597GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec


CL 30.0dB
VAVG 3
MKR -97.17dBm
RL 0dBm
10dB/
57.5767856GHz
MKR
57.5767856 GHz
-97.17 dBm
D
F10
STEP 22
43.3°C
s/o 538595
10-12-98
CENTER 57.5767856GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec


CL 30.0dB
VAVG 4
MKR -96.33dBm
RL 0dBm
10dB/
57.7200114GHz
MKR
57.7200114 GHz
-96.33 dBm
D
F10
STEP 22
43.3°C
S/0538595
10-12-98
AMSU
9
SFIT
CENTER 57.7200114GHz
SPAN 500.0kHz
*RBW 1.0kHz
*VBW 1.0kHz
*SWP 1.30sec


CL 30.0dB
RL 0dBm
10dB/
MKR -4.00dBm
57.29036GHz
MKR
57.29036 GHz
-4.00 dBm
F10
43.3°C
STEP 22
S/O 538595
10-12-98
AMSU
CENTER 57.29034GHz
*RBW 300kHz
*VBW 300kHz
SPAN 10.00MHz
*SWP 50.0ms


ATTEN 40dB
RL 20.3dBm
10dB/
MKR 11.30dBm
6.87480GHz
MKR
6.87480 GHz
11.30 dBm
F10
43.3°C
STEP 22
S/O 538525
10-12-98
CENTER 6.87480GHz
SPAN 50.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms


CL 30.0dB
RL 0dBm
10dB/
MKR -47.33dBm
114.580673GHz
MEAS UNCAL
MKR
114.580673 GHz
-47.33 dBm
Fro
43.3°C
STEP 22
S/O 5315795
10-12-98
AMSU
9
BEIT
CENTER 114.580673GHz
SPAN 1.000MHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

TEST DATA SHEET 6A (Sheet 4 of 4)
Functional Testing (Paragraph 4.2.1)

Pre-Environmental CPT

Paragraph 4.2.1.3 (Cont):

Step	Test	Expected	Measured	Pass/Fail
22 (Cont)	Spurious and Sub	-200 to -90 dBc	see plots	Pass
	Power level of 114.58 GHz signal	<-10 dBm	-47 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 5 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = .4 dB	N/A

Shop Order No.: 538595

Operation: 0110

Unit Serial No.: F10

Date: 10-12-98

Test Engineer: _____

Quality Control: 7A 269 OCT 13 '98

Govt. Rep.: 10/23/98

Section 2A: Acceptance Level Vibration - F09

This section includes the data from the limited functional tests which take place before and throughout vibration, and the vibration-specific. The following table summarizes the results of the limited functional test.

Test	Expected Value	Post X axis	Post Y axis	Post Z axis
Output Frequency	57290344 ± 200 kHz	57290328 kHz	57290329 kHz	57290329 kHz
Output Power	18.5 dBm ± 1.5 dB	18.1 dBm	18.0 dBm	18.0 dBm

The following pages contain the raw data.

TEST DATA SHEET 8B

Limited Functional Test (Paragraph 4.2.3)

Post X-Axis LPT

Test Setup Verified: [signature]
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	0.6 Vac	P
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	0.5 Vac	P

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	+15.00 V	PASS
	Voltage Meter 2	-15 ± 0.1 V	-15.03 V	PASS
	Current Meter 1	600 mA max.	521 mA	PASS
	Current Meter 2	100 mA max.	64 mA	PASS
9	Output Frequency	57.290344 ± .0001 GHz	57.290328 GHz	PASS
10	Output Power	18.5 dBm ±1.5 dB	18.07 dBm	PASS

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/12/98

Shop Order No.: 538596

Operation: 0150

Unit Serial No.: F09

Date: 11/12/98

Test Engineer: [signature]

Quality Control: [signature] 11/12/98

Govt. Rep.: [signature] 11-12-98

TEST DATA SHEET 8C

Limited Functional Test (Paragraph 4.2.3)

Post Y-Axis LPT

Test Setup Verified: Q Pina
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	0.5 Vac	P
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	0.6 Vac	P

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	15.00 V	P
	Voltage Meter 2	-15 ± 0.1 V	-15.03 V	P
	Current Meter 1	600 mA max.	522 mA	P
	Current Meter 2	100 mA max.	-64 mA	P
9	Output Frequency	57.290344 ± .0001 GHz	57.290329	P
10	Output Power	18.5 dBm ±1.5 dB	18.02	P

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/12/98

Shop Order No.: 538596

Operation: 0150

Unit Serial No.: F09

Date: 11/12/98

Test Engineer: Q Pina

Quality Control: 7A 197 11/12/98

Govt. Rep.: V. Gallagher 11-12-98

TEST DATA SHEET 8D

Limited Functional Test (Paragraph 4.2.3)

Post Z-Axis LPT

Test Setup Verified: _____
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	0.5 Vac	P
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	0.5 Vac	P

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	15.00 V	P
	Voltage Meter 2	-15 ± 0.1 V	-15.02 V	P
	Current Meter 1	600 mA max.	522 mA	P
	Current Meter 2	100 mA max.	64 mA	P
9	Output Frequency	57.290344 ± .0001 GHz	57.290329	P
10	Output Power	18.5 dBm ±1.5 dB	18.0	P

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/12/98

Shop Order No.: 538596

Operation: 0150

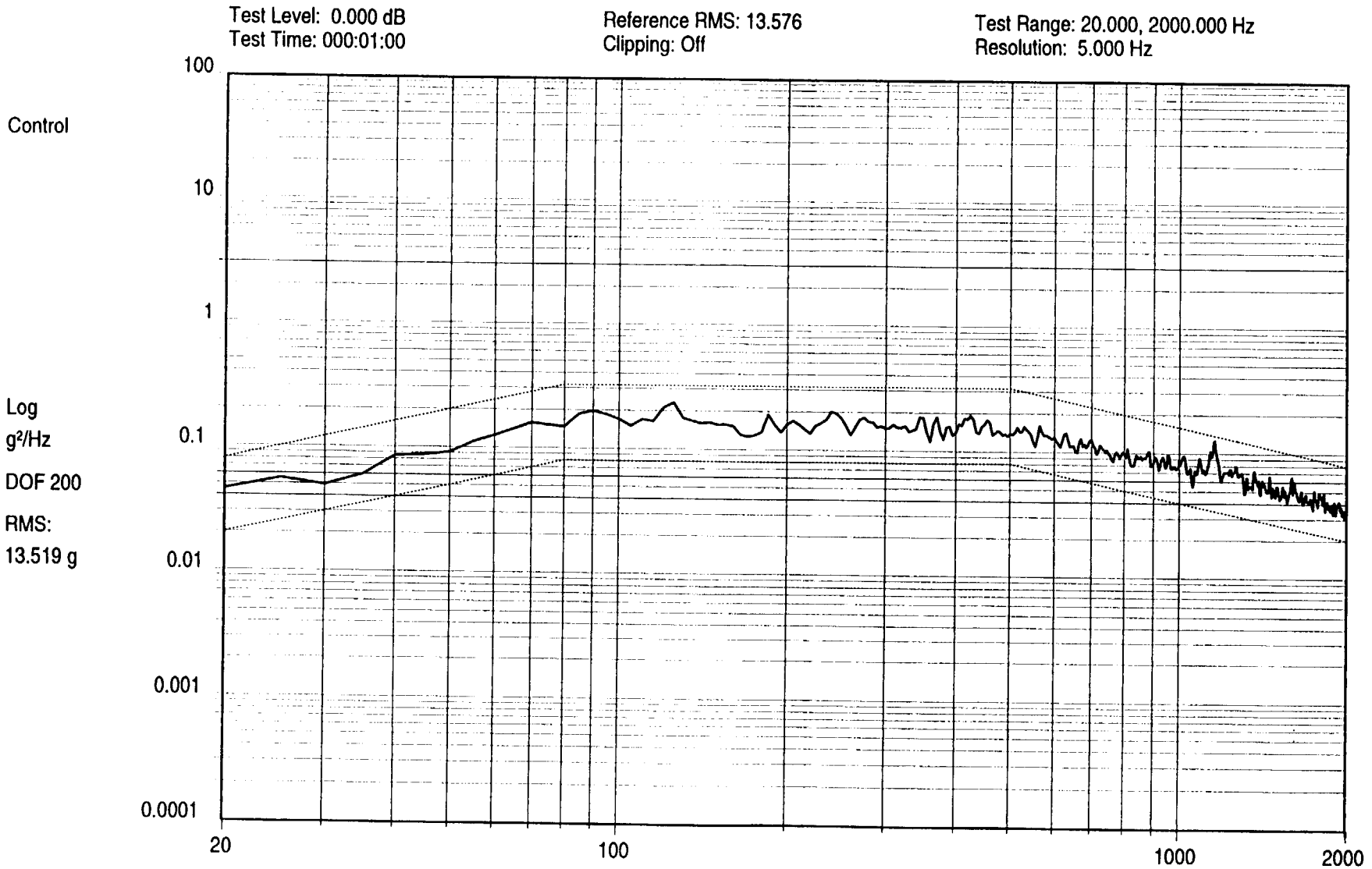
Unit Serial No.: F09

Date: 11/12/98

Test Engineer: _____

Quality Control: 7A 197 11/12/98

Govt. Rep.: _____ 11-12-98

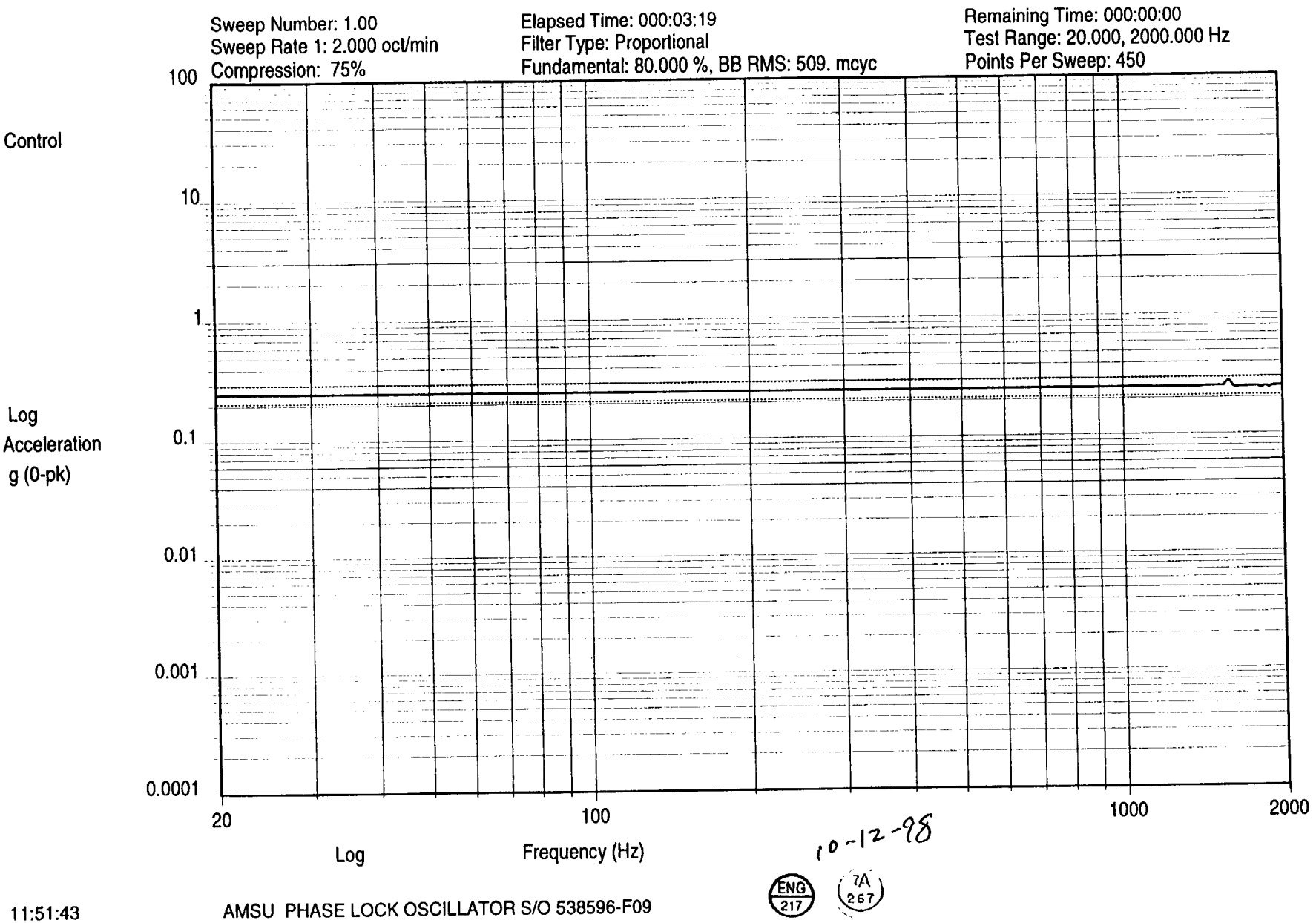


11-12-98

11:34:21
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09
X AXIS SYSTEM CHECKOUT P/N 1348360-1 S/N ,F09
Test Name: PLO.tmp

ENG 217 7A 267



10-12-98

ENG 217

7A 267

11:51:43
12-Nov-1998

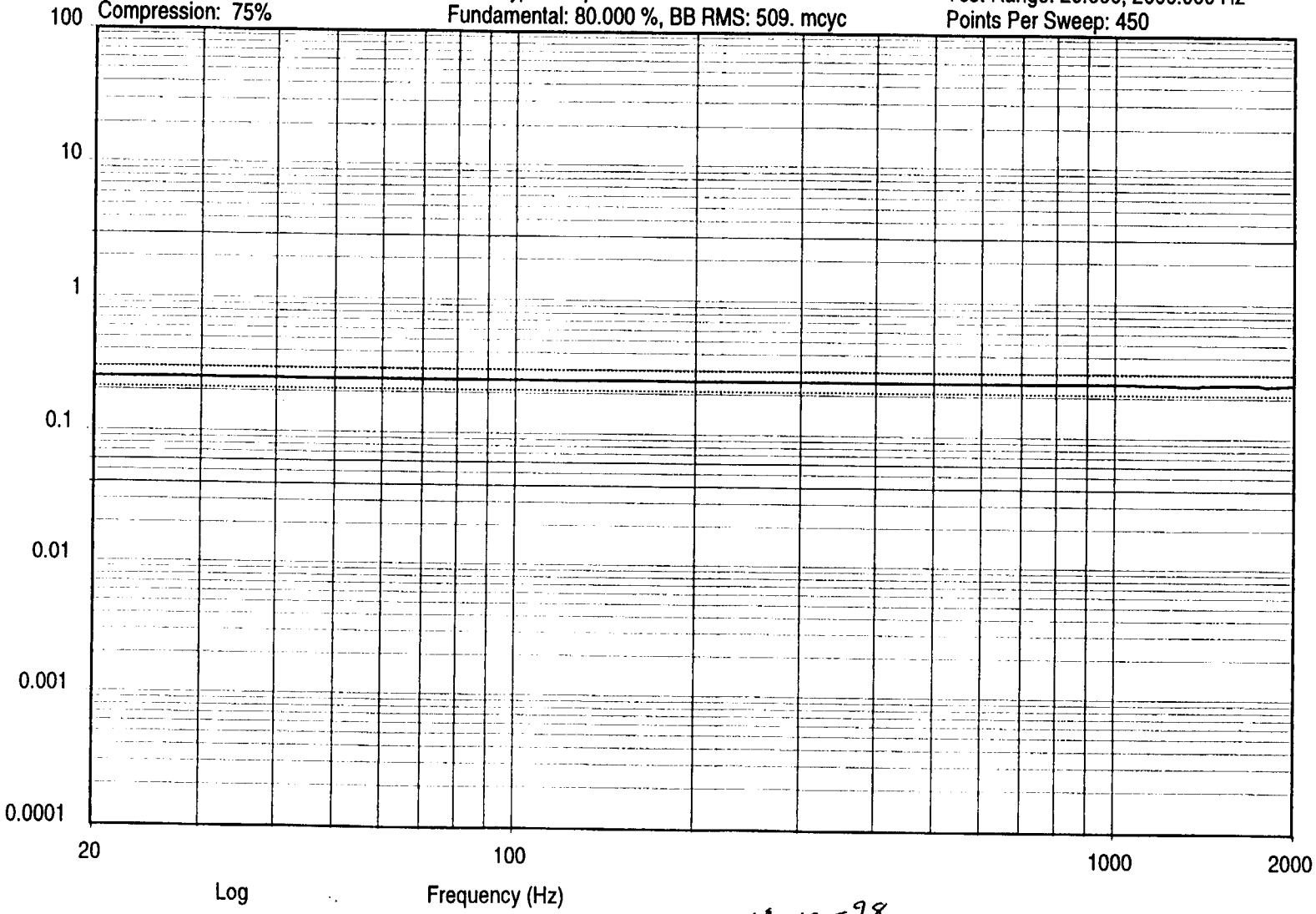
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09
X AXIS CHECKOUT P/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



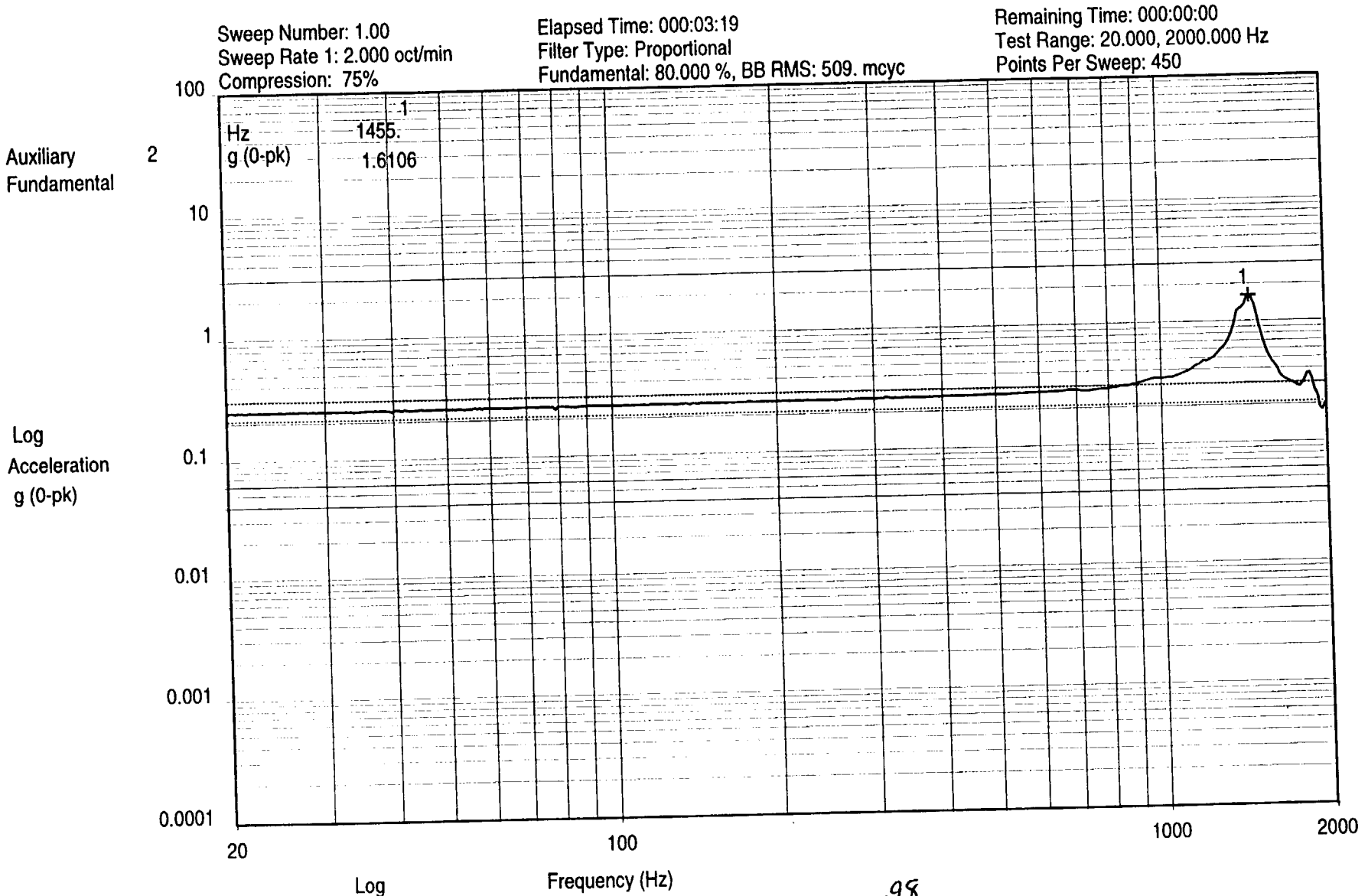
14:04:14
12-Nov-1998

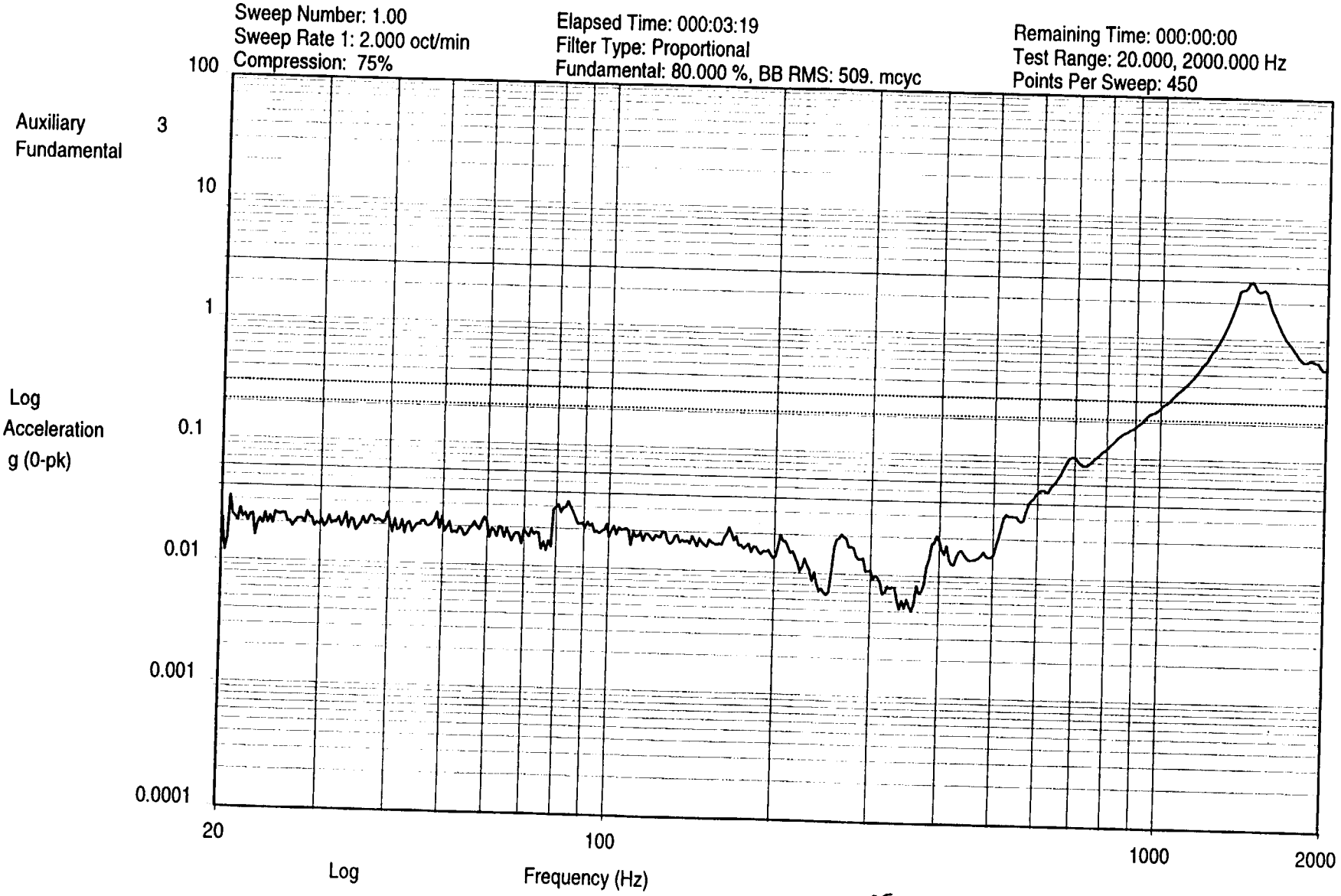
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

10-12-98

ENG 217 TA 800


Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%
Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc
Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450
Auxiliary
Fundamental
2
Hz
g (0-pk)
1
1455.
1.6106
100
10
1
0.1
0.01
0.001
0.0001
Log
Acceleration
g (0-pk)
20
100
1000
2000
Log
Frequency (Hz)
UNIT X
14:04:22
12-Nov-1998
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp
11-12-98
ENG 217
7A 200



14:04:28
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

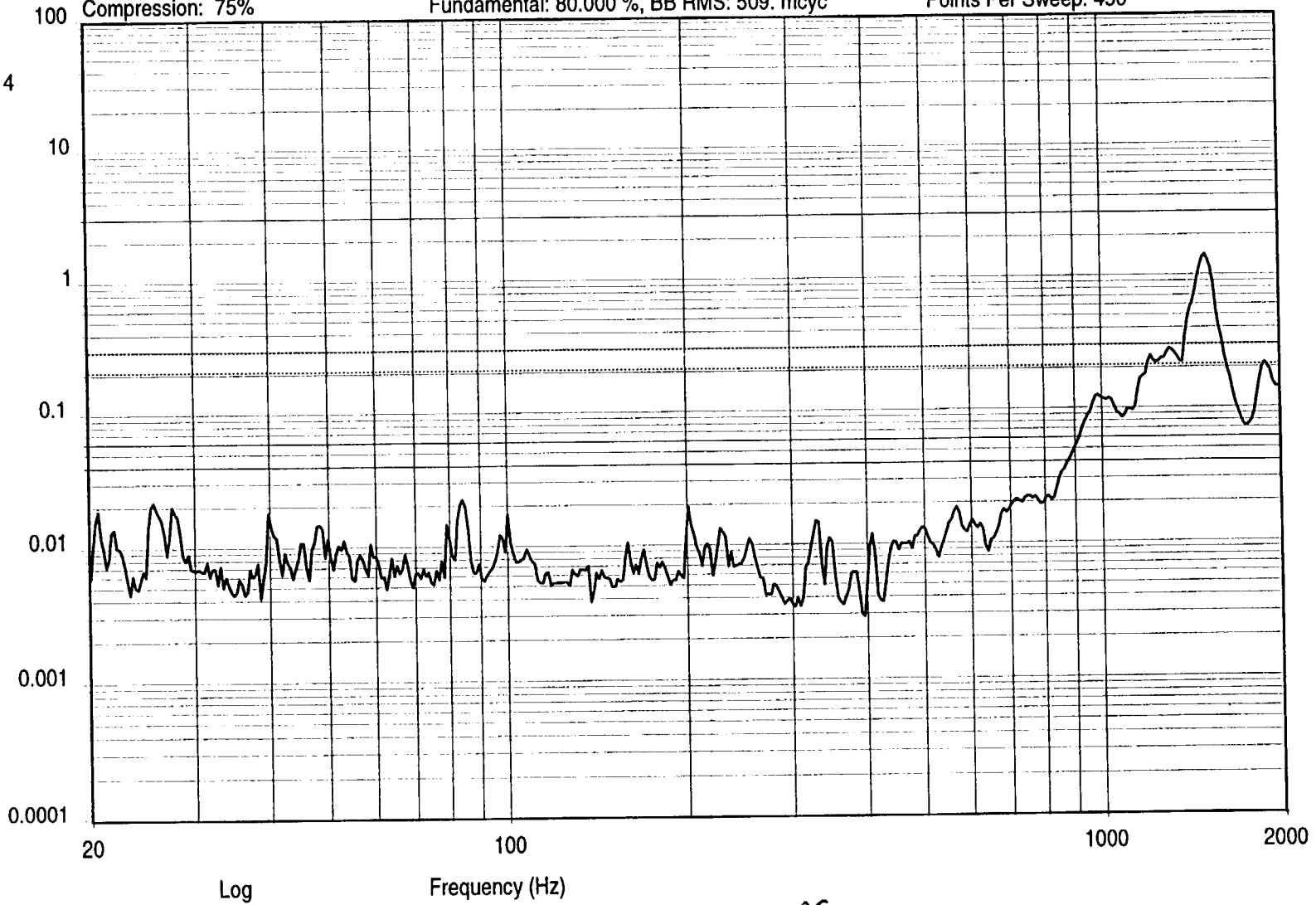
ENG 217 7A 200

UNIT Z

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



14:04:32
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

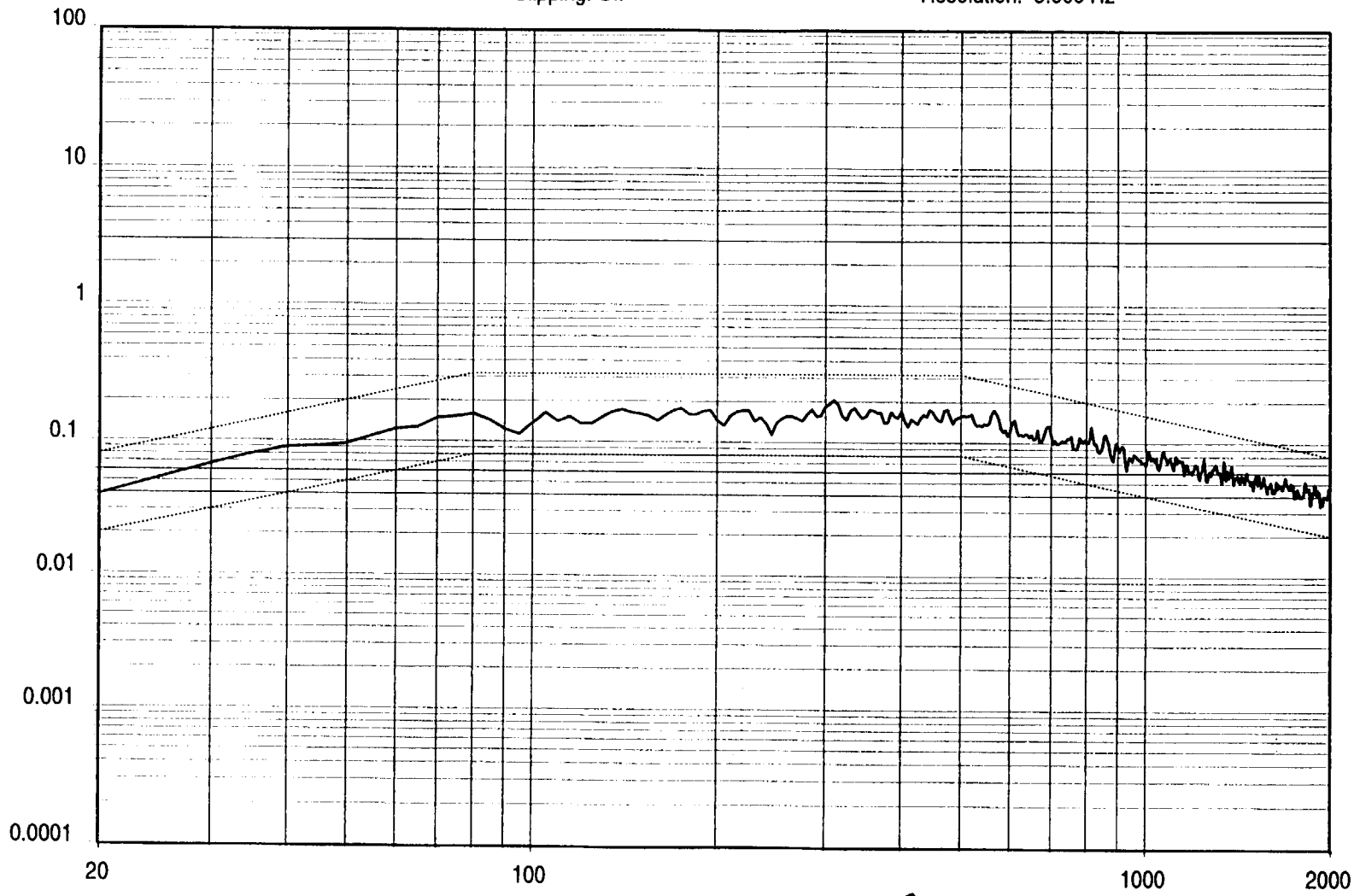
ENG 217 7A 200

UNIT Y

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Control

Log
g²/Hz

DOF 200

RMS:
13.486 g

11-12-98

ENG 217 2002

14:22:27
12-Nov-1998

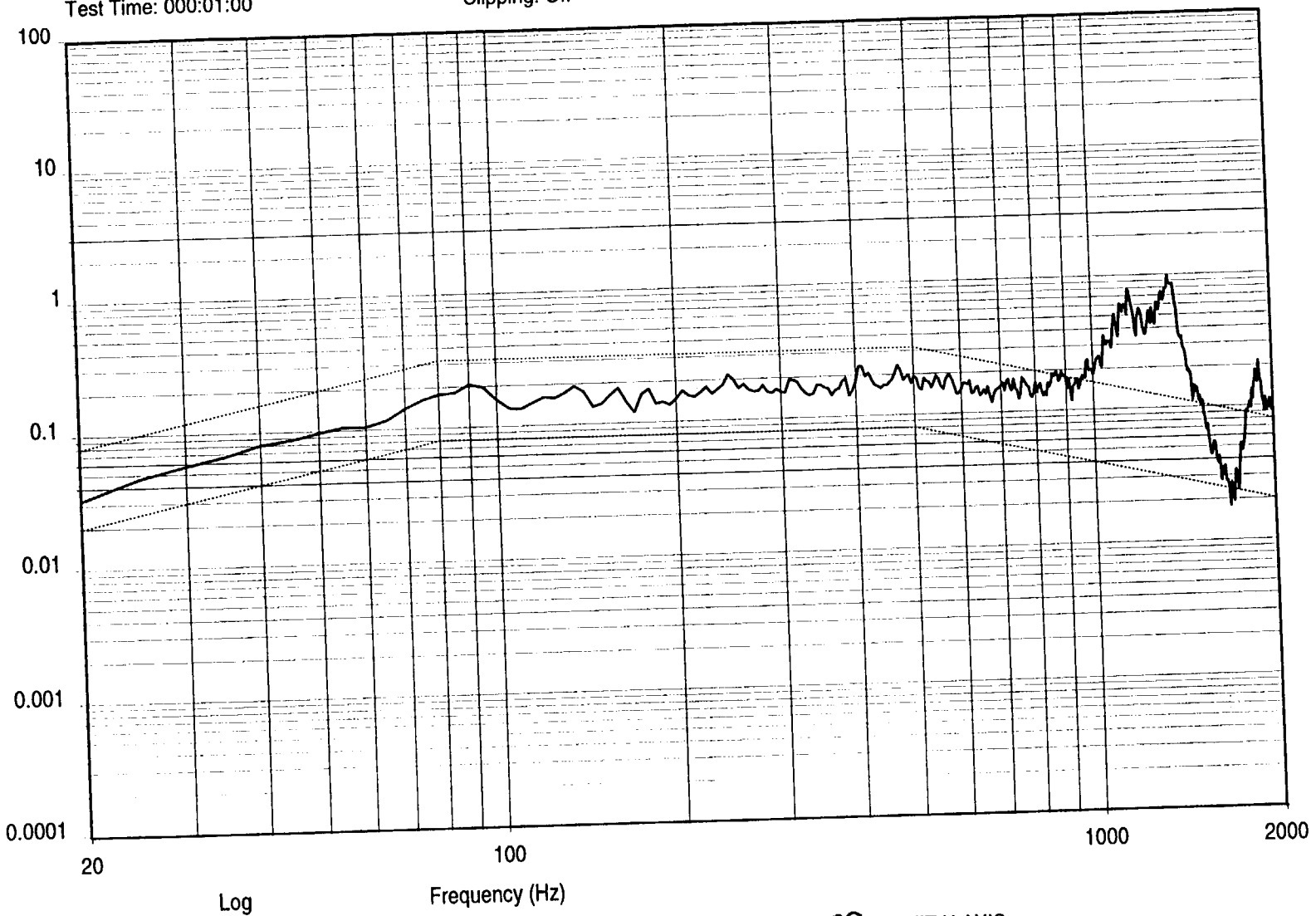
AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
X AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 2

Log
g^2/Hz

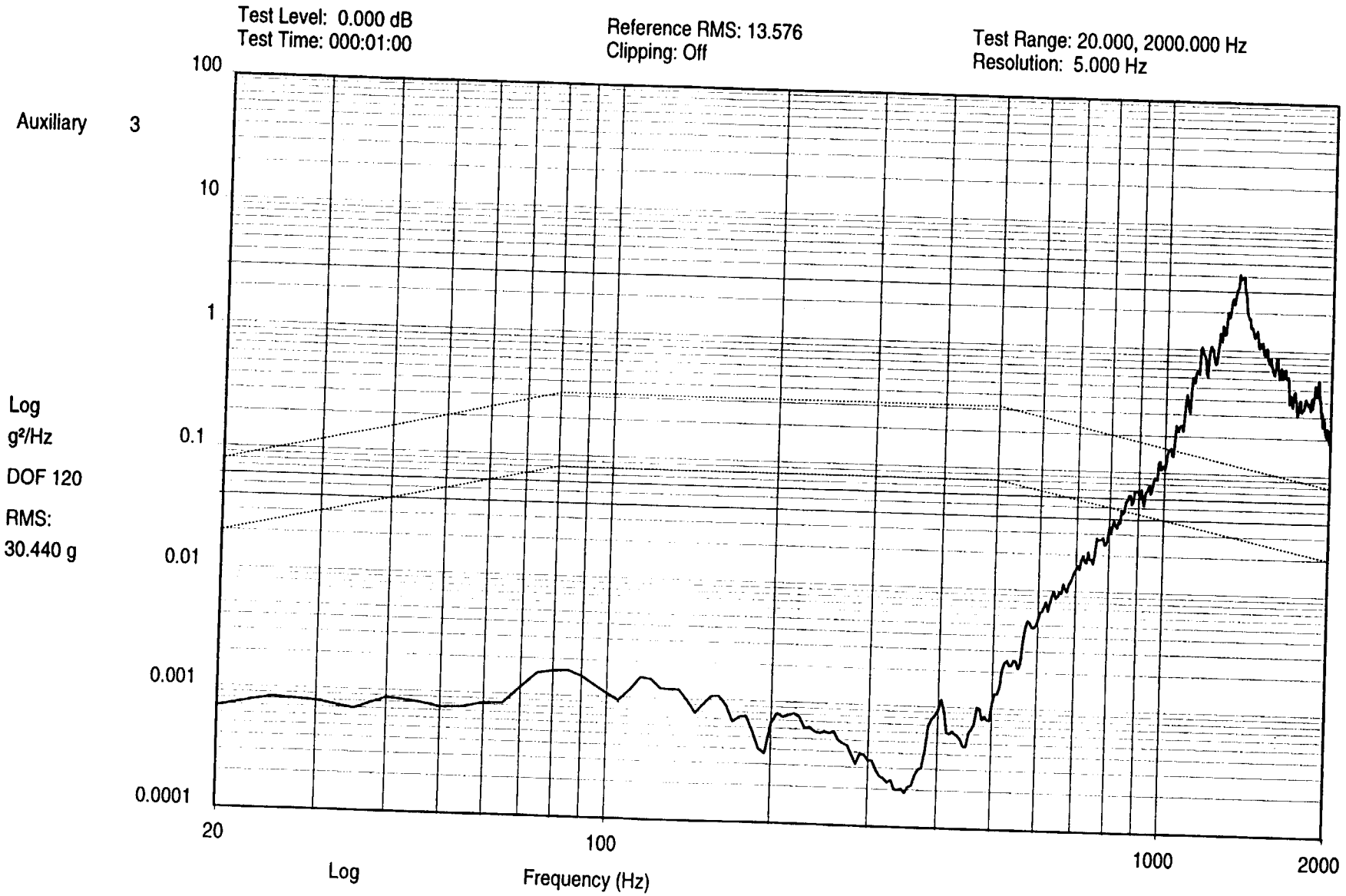
DOF 120

RMS:
20.562 g

14:17:40
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT 11-12-98 UNIT X AXIS
X AXIS TEST P/N 1348360-1 S/N ,F09
Test Name: PLO.tmp

ENG 217



14:17:45
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT UNIT Z AXIS
X AXIS TEST P/N 1348360-1 S/N ,F09

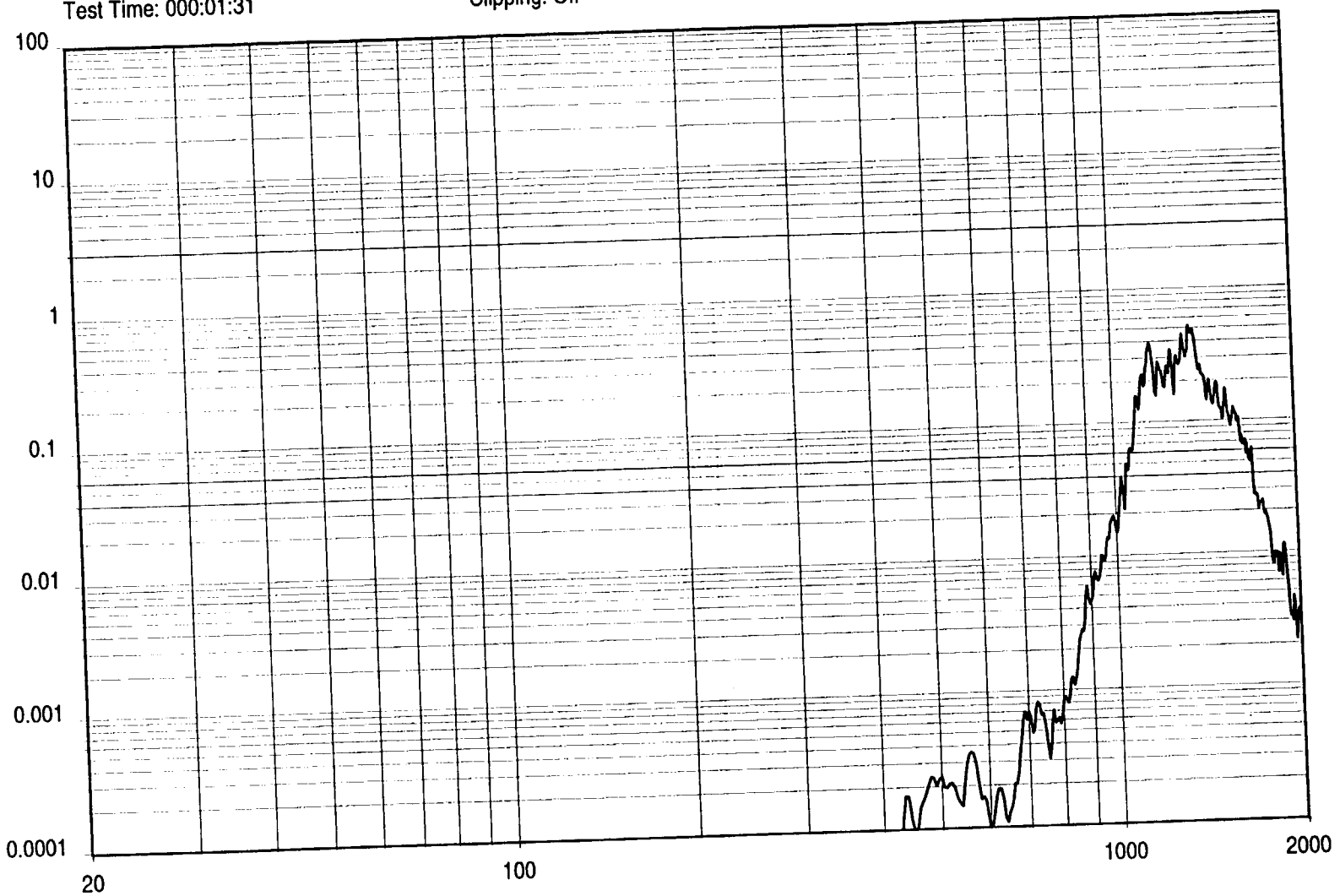
Test Name: PLO.tmp

11-12-98
ENG 217 002

Test Level: -18.000 dB
Test Time: 000:01:31

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

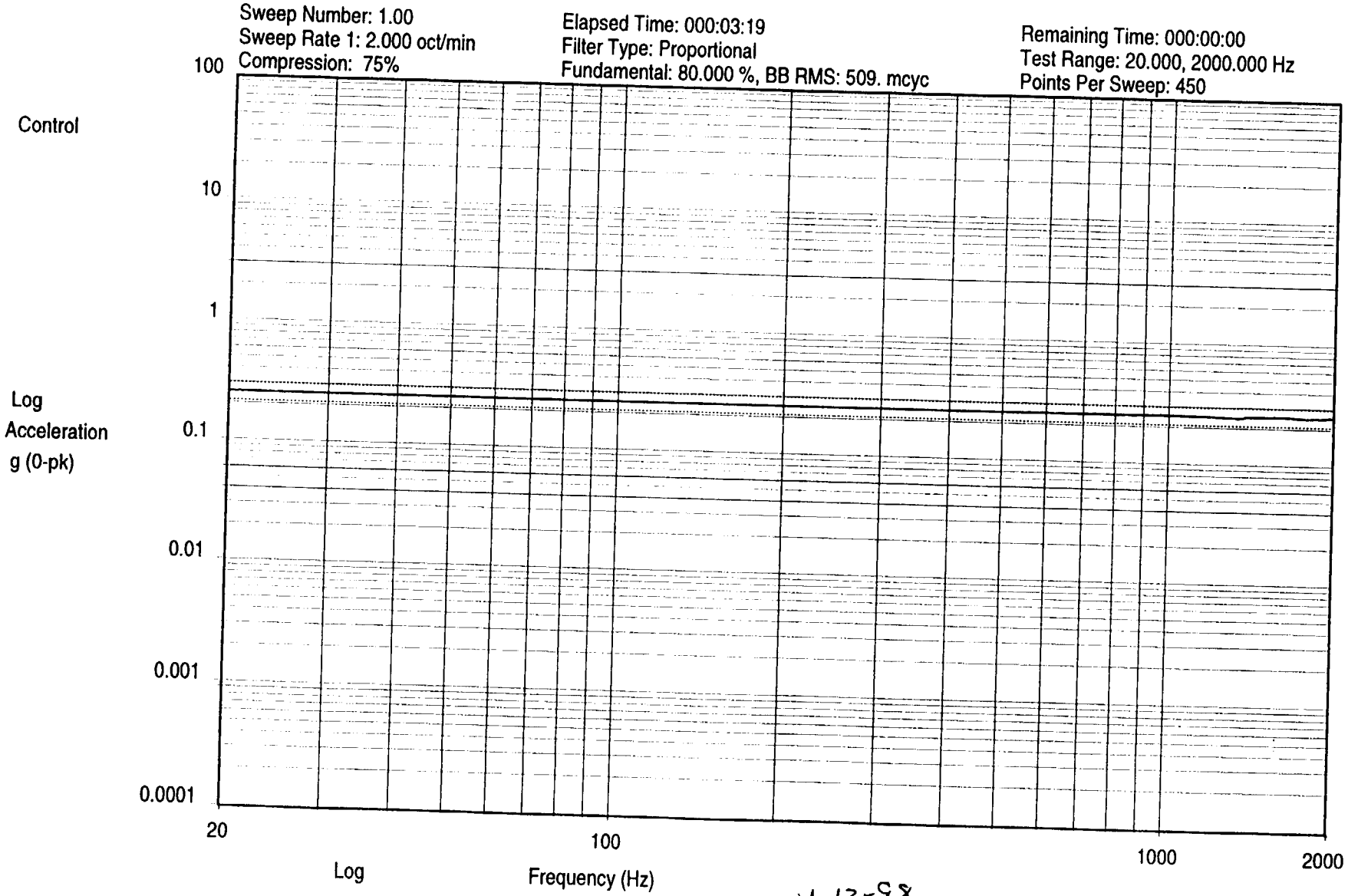
Log
g^2/Hz
DOF 120
RMS:
11.617 g

UNIT Y AXIS

15:56:35
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
X AXIS TEST P/N 1348360-1 S/N ,F09
Test Name: PLO.tmp

ENG 217 11-12-98



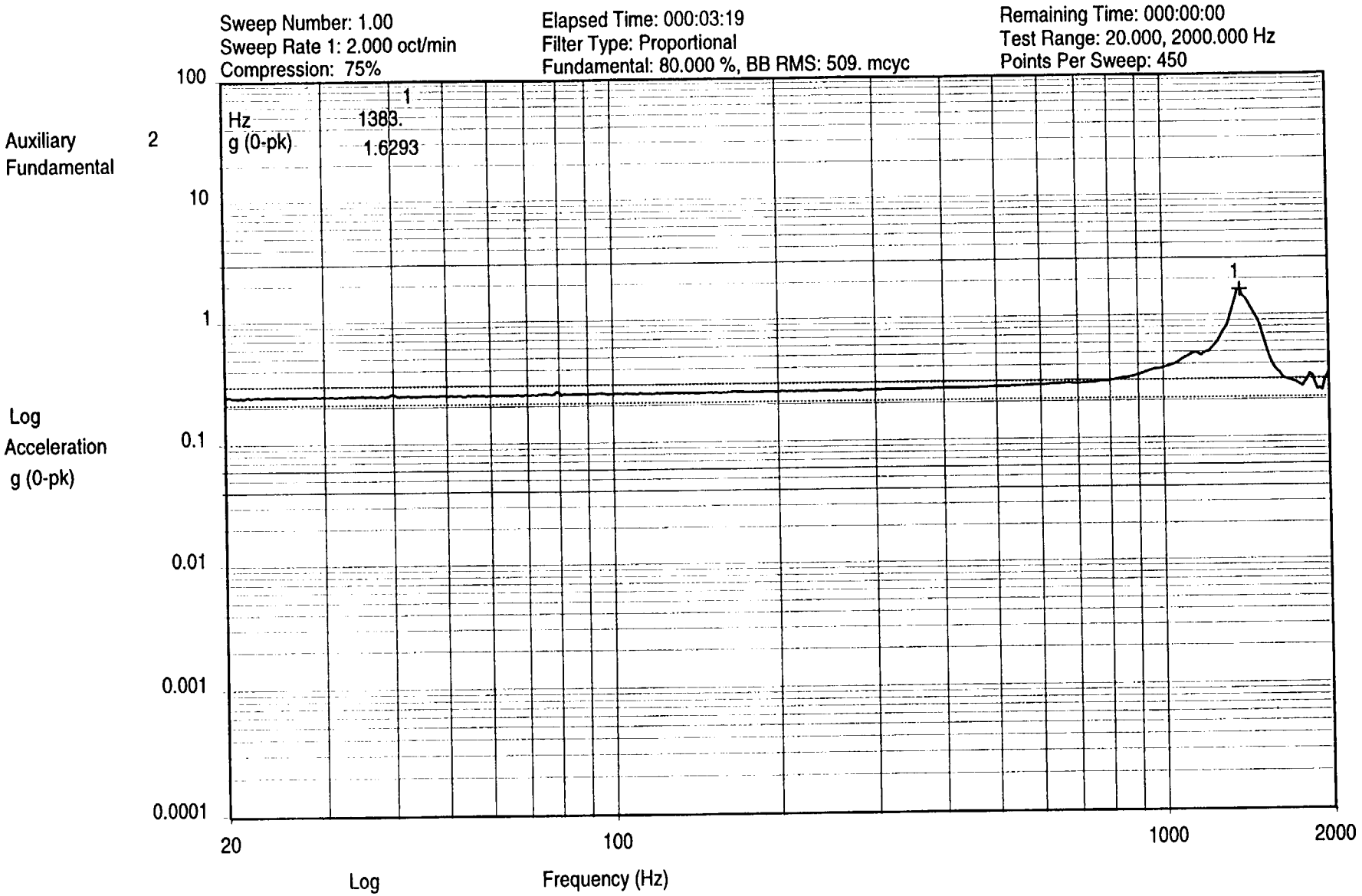
14:41:10
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

11-12-98

ENG 217 TA 200



14:40:56
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

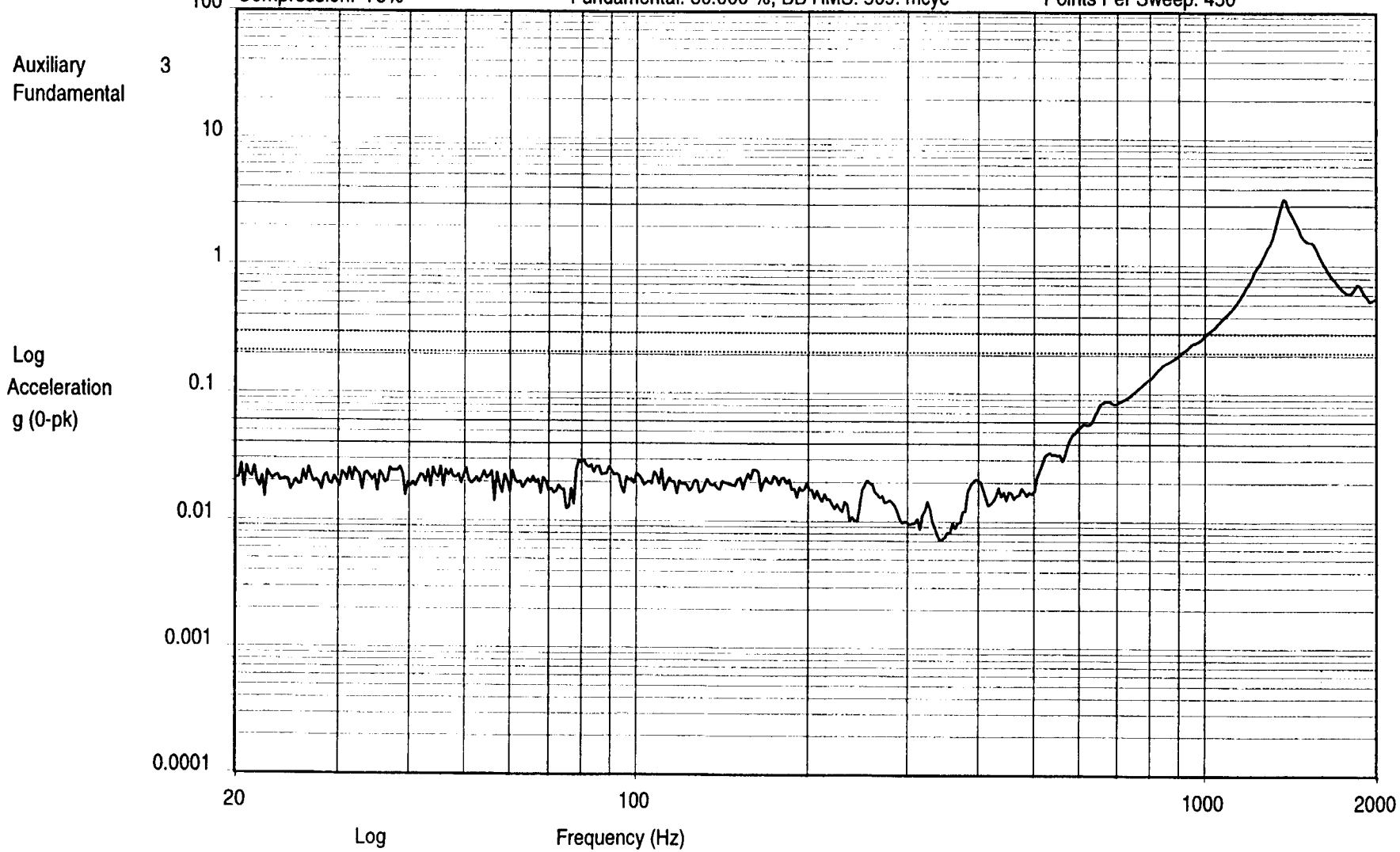
11-12-98

ENG 217 7A 200

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450

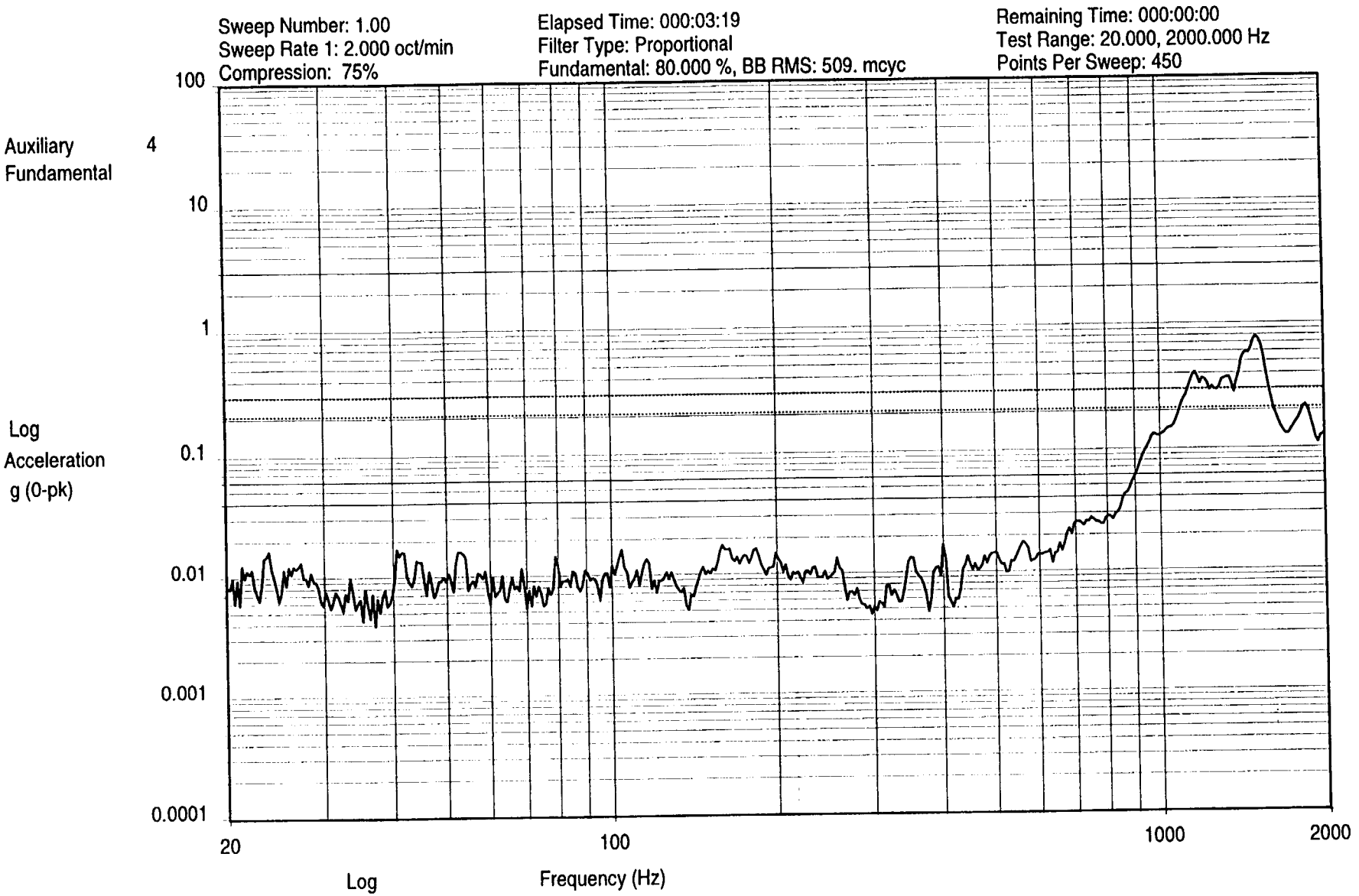


14:41:00
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98
ENG 217
7A 200

UNIT Z



14:41:04
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
X AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

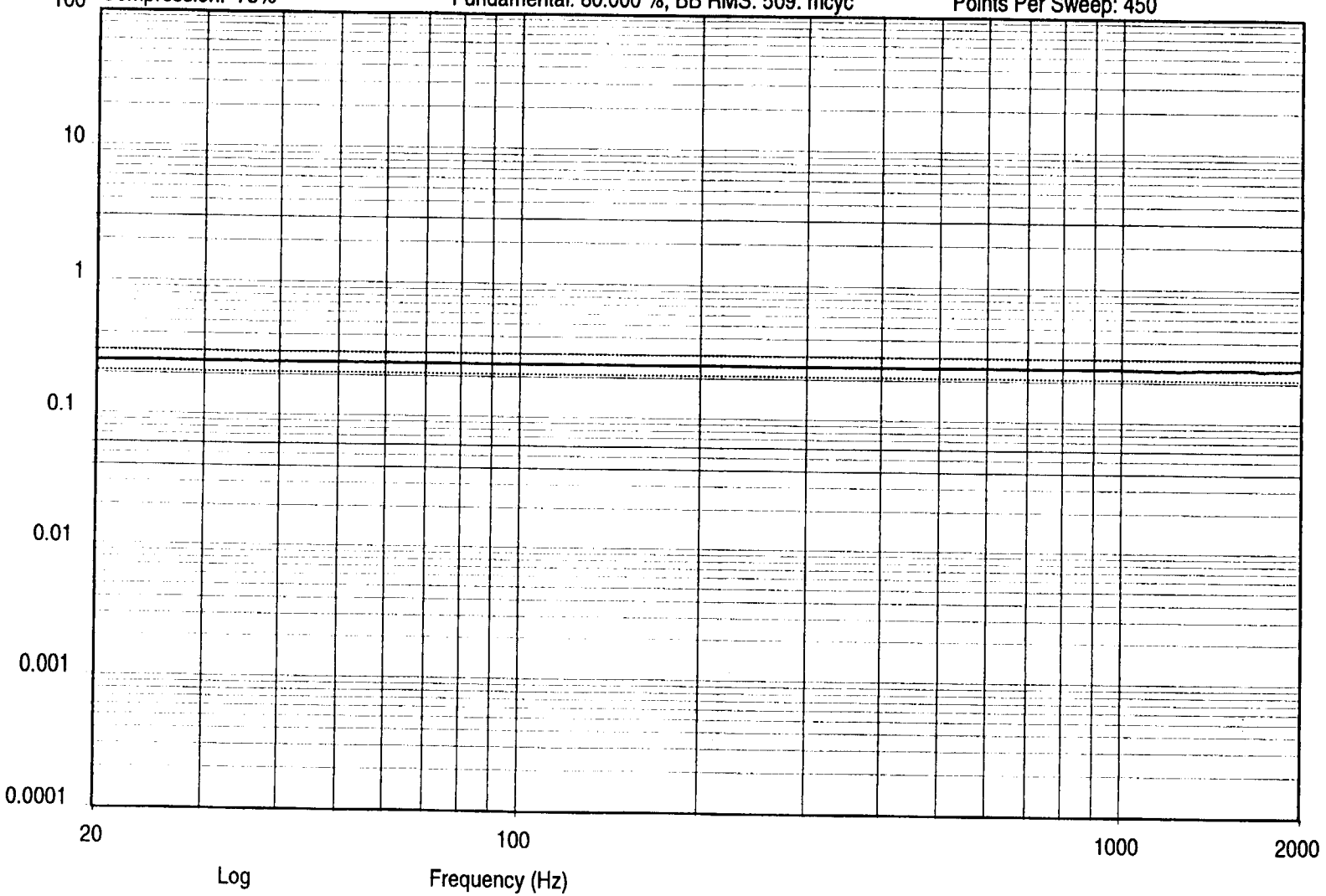
ENG 217 7A 200

UNIT Y

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



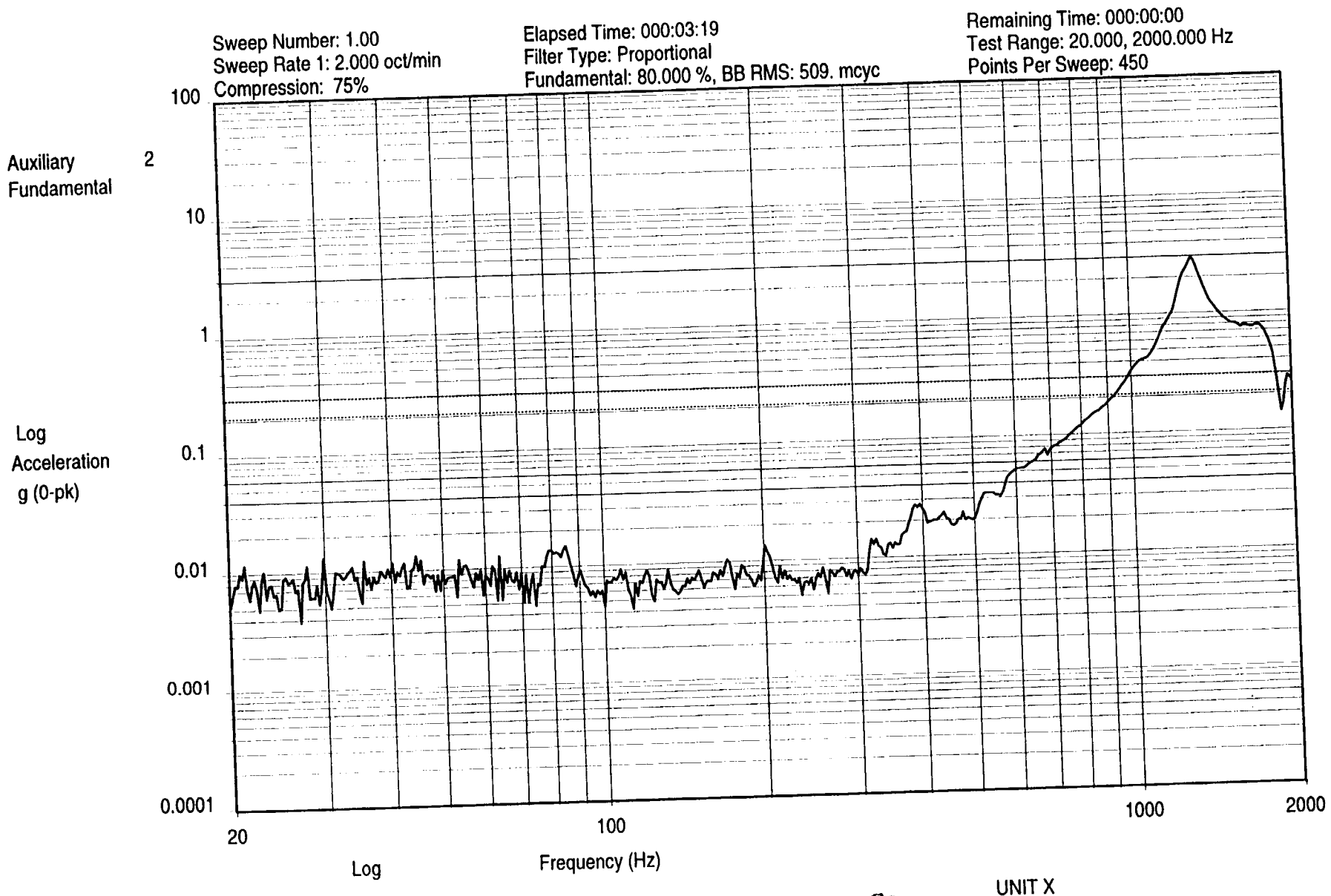
15:23:10
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

12-12-98

ENG 217 7A 200



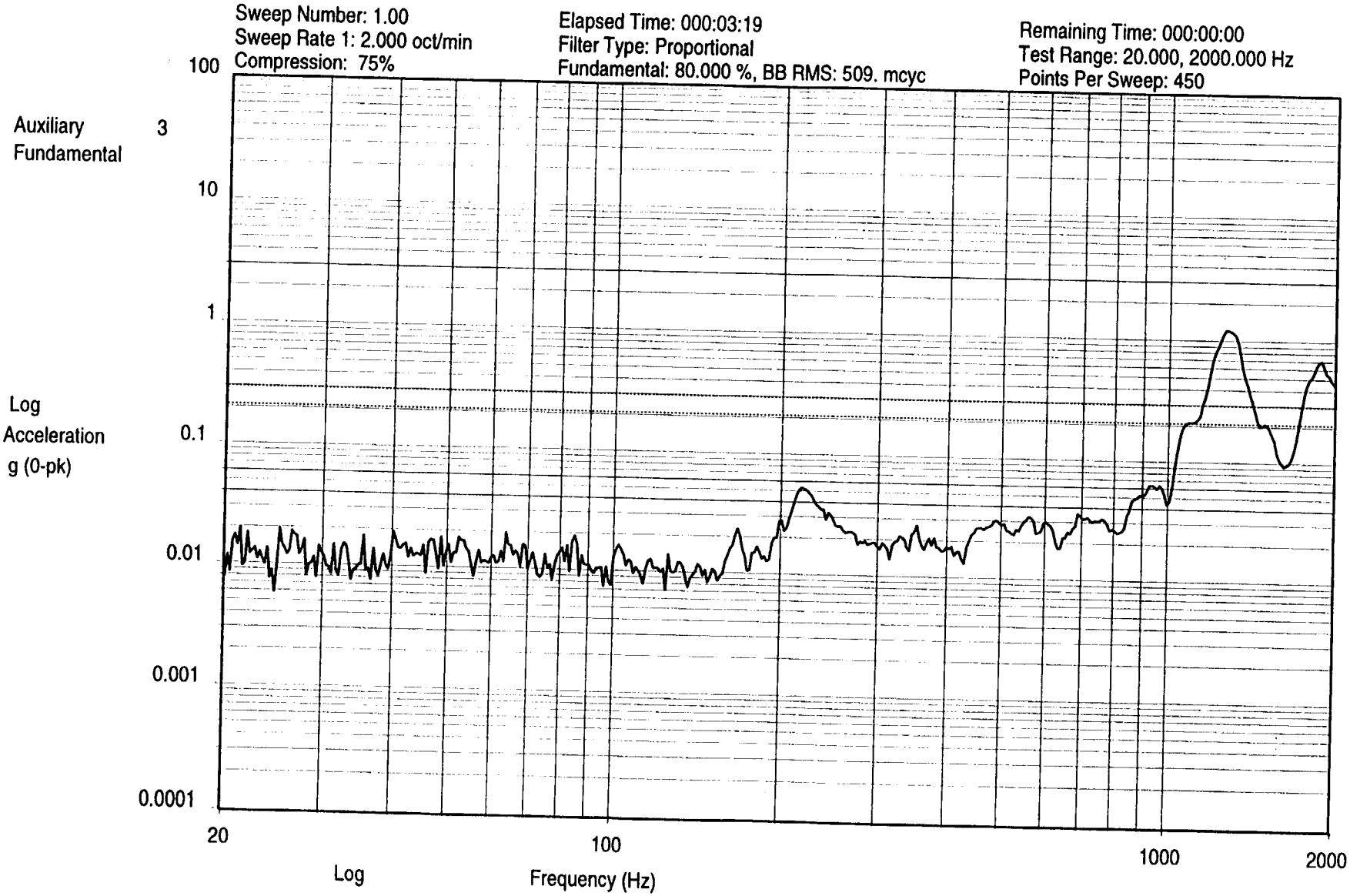
15:23:23
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

11-12-98

ENG 217 1A 200



15:23:27
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

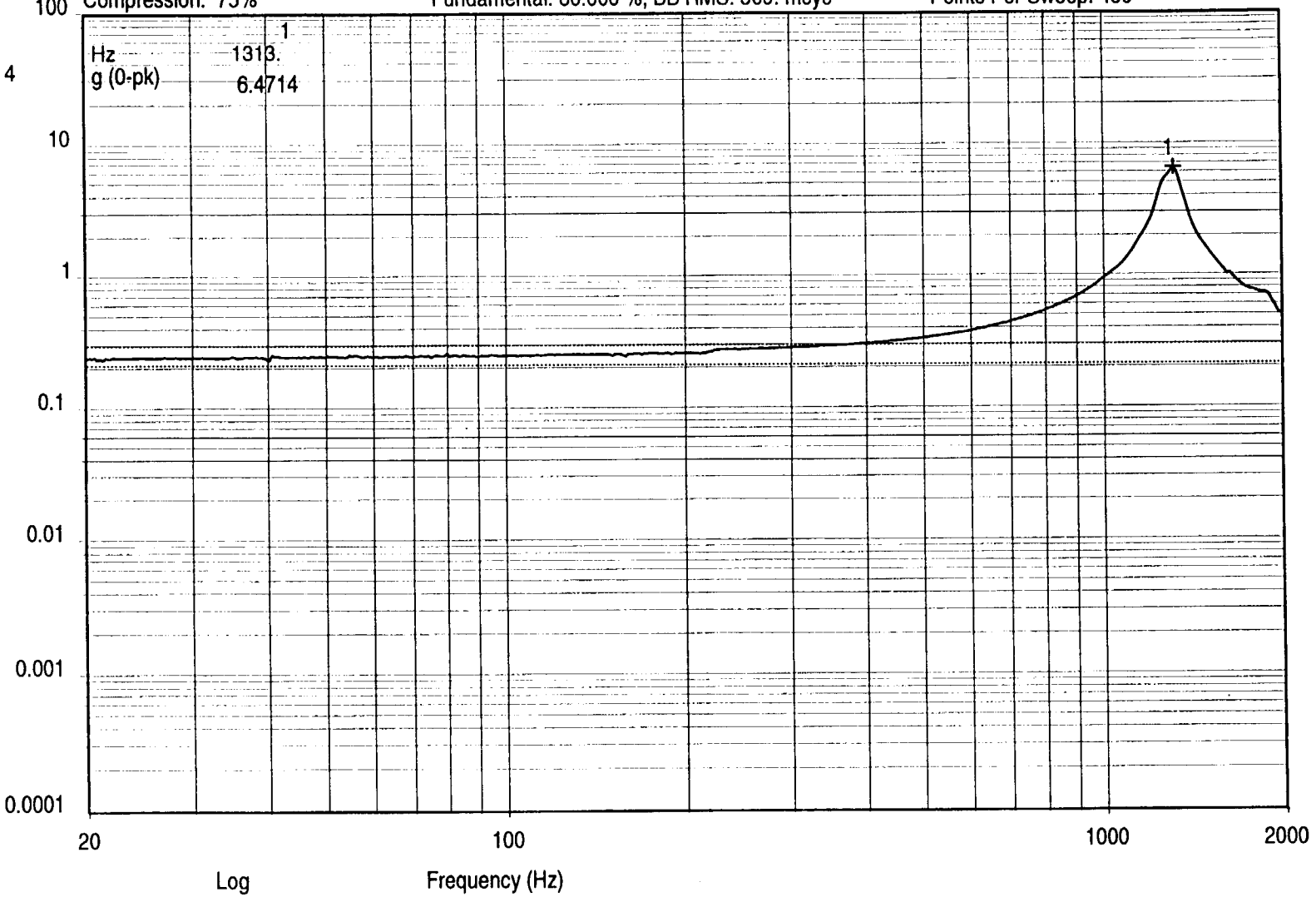
11-12-98

UNIT Z

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



Auxiliary Fundamental 4

Log Acceleration g (0-pk)

UNIT Y

15:23:44
12-Nov-1998

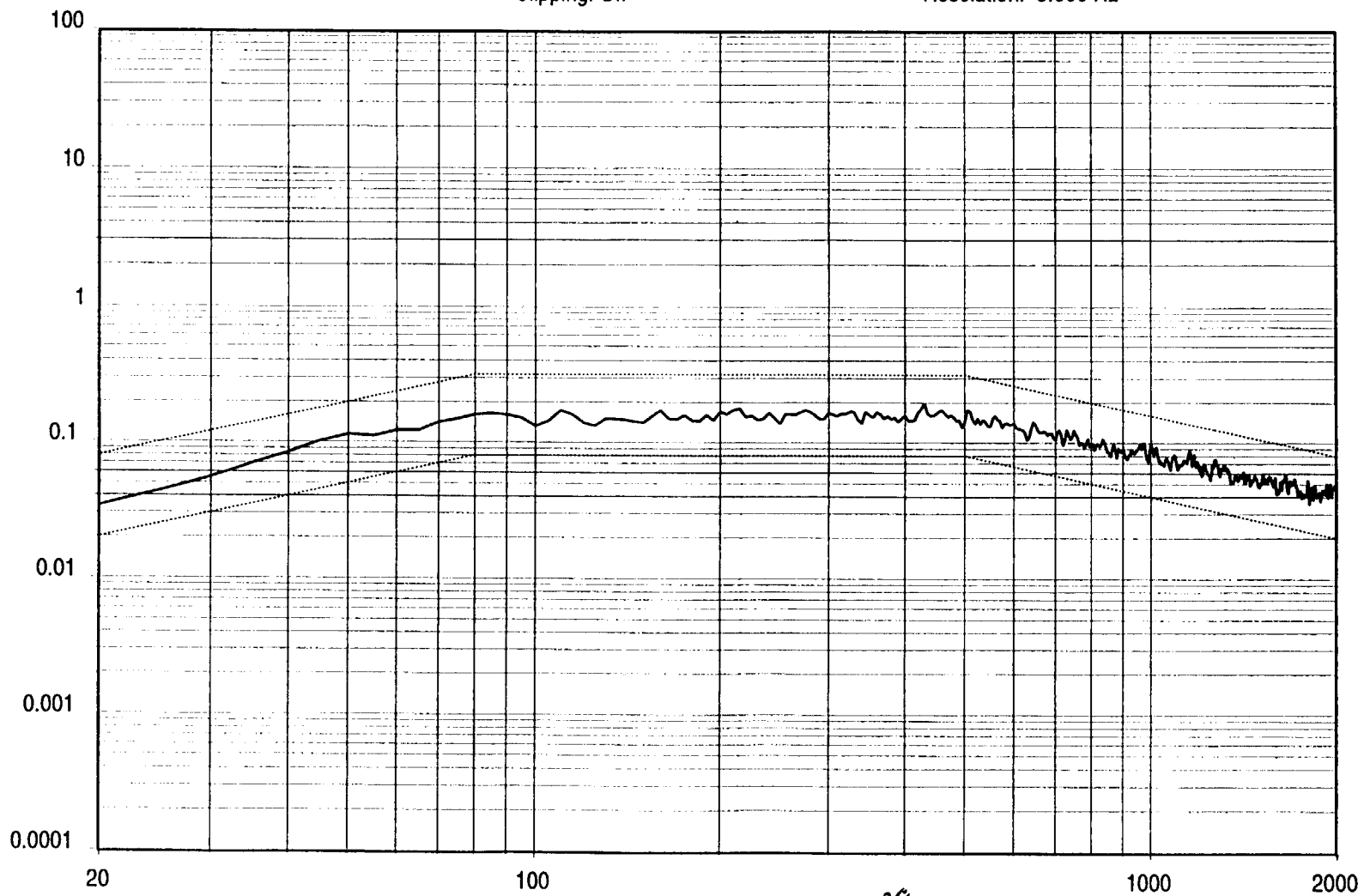
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT 11-12-98
Y AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

ENG 217 A

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



11-12-98
~~12-11-98~~

15:35:59
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Y AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

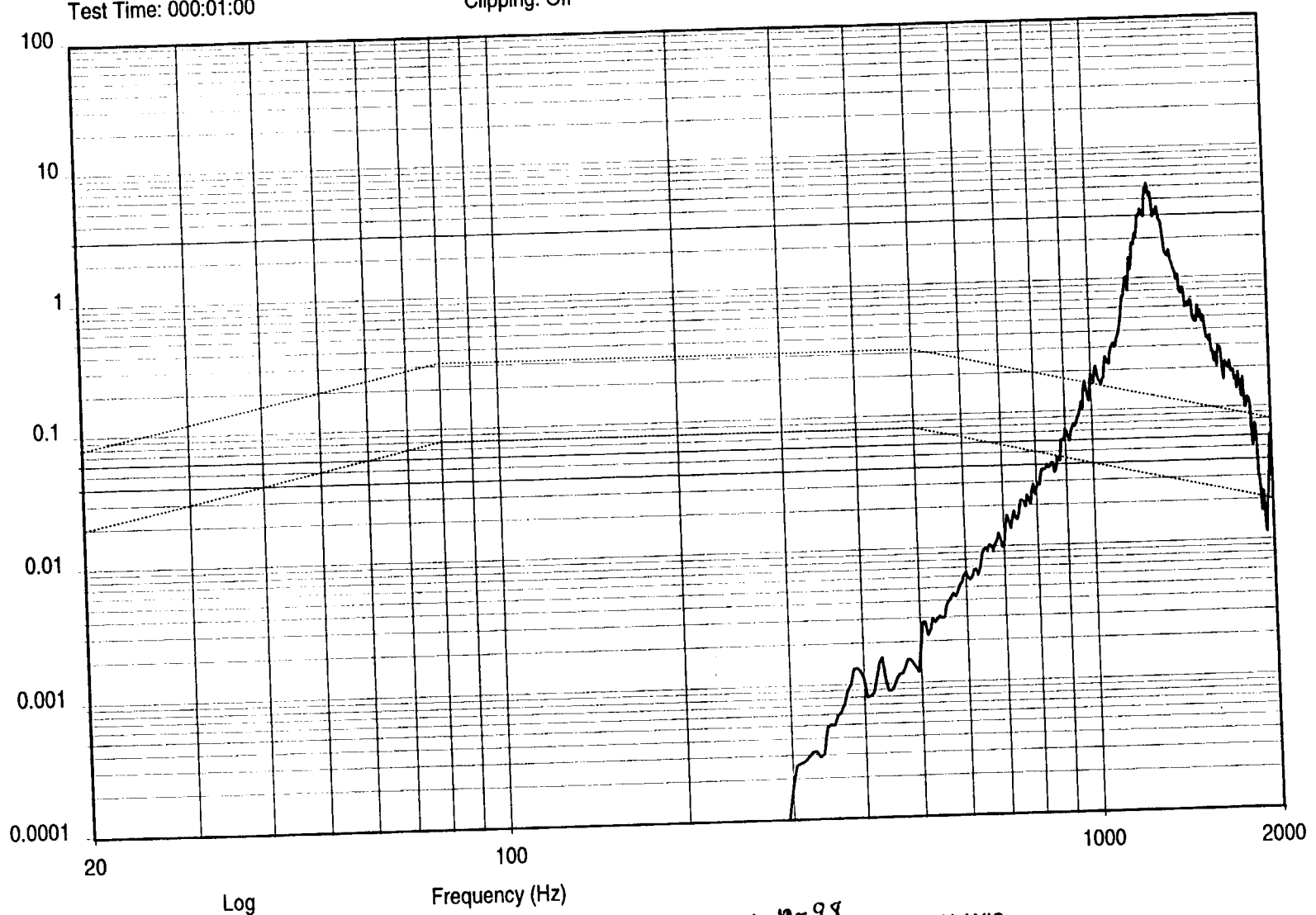
ENG 217 7A 200

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz

Auxiliary 2



Log
g²/Hz

DOF 120

RMS:
29.108 g

Log Frequency (Hz)

11-12-98

UNIT X AXIS

15:36:11
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Y AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

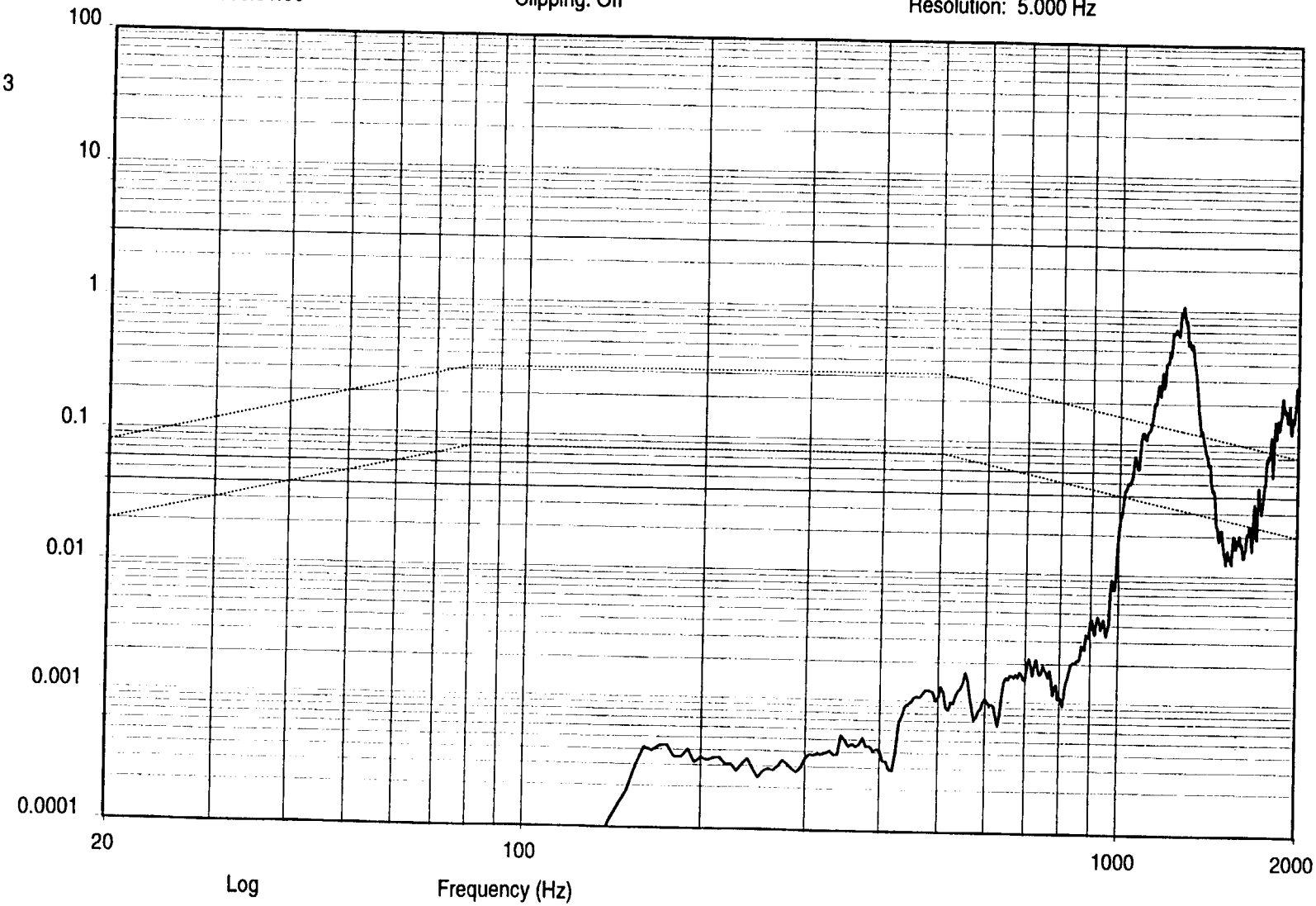
ENG 217 A 200

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz

Auxiliary 3



Log
g²/Hz
DOF 120
RMS:
13.178 g

15:36:15
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT UNIT Z AXIS
Y AXIS TEST P/N 1348360-1 S/N ,F09
Test Name: PLO.tmp

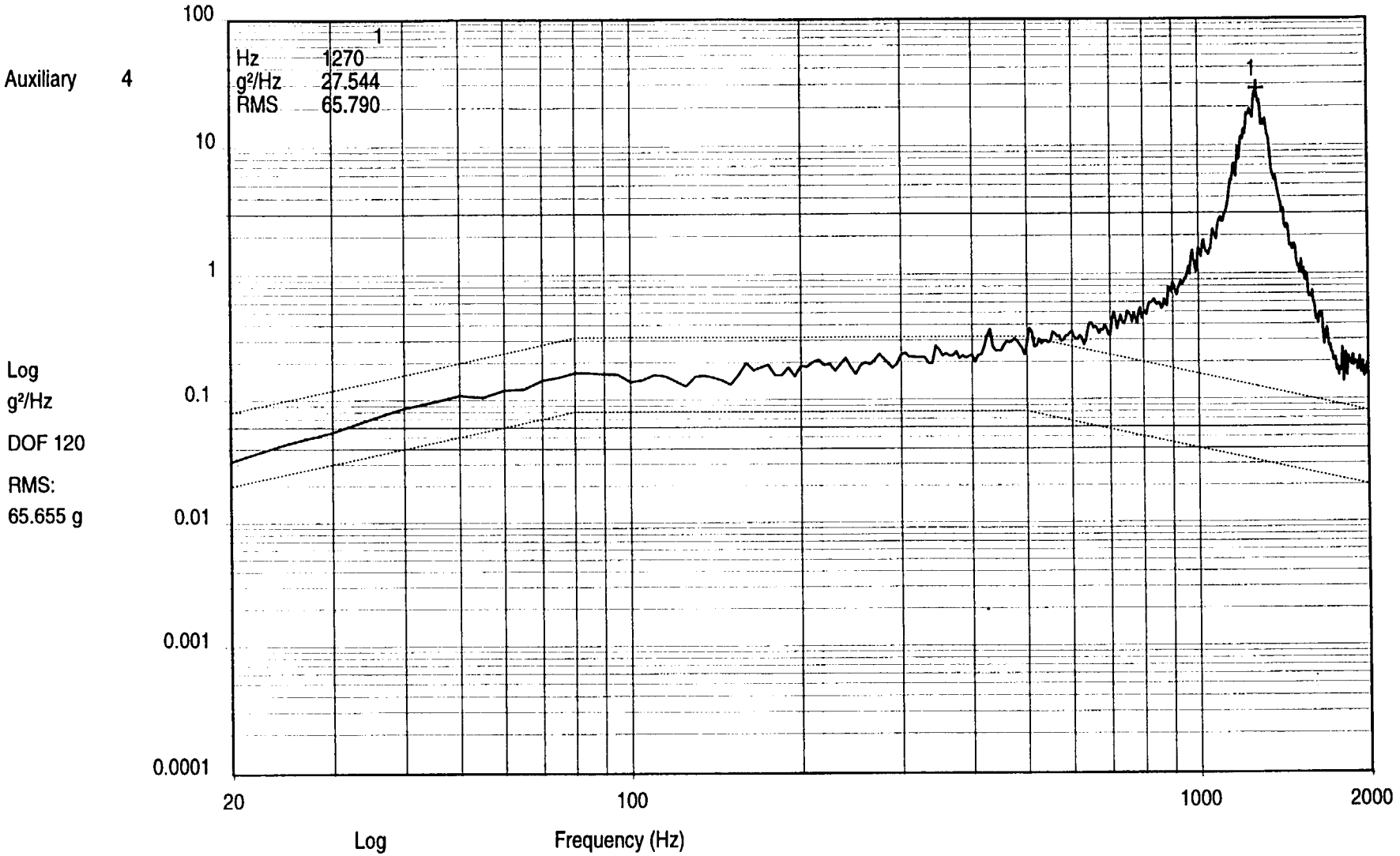
11-12-98

ENG 217 7A 200

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



15:36:25
12-Nov-1998

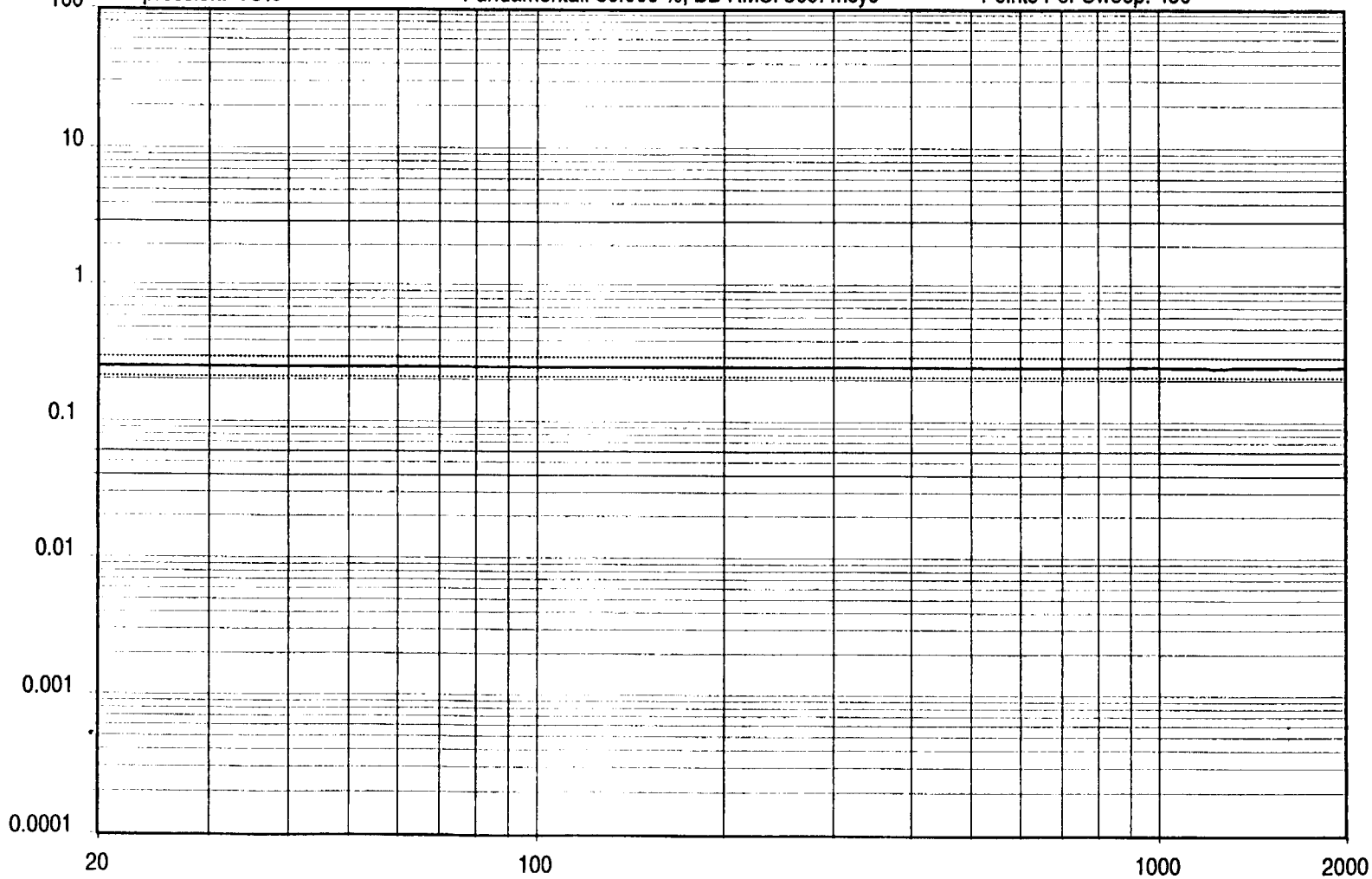
AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT 11-12-98 UNIT Y AXIS
Y AXIS TEST P/N 1348360-1 S/N ,F09
Test Name: PLO.tmp

ENG 217 7A

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



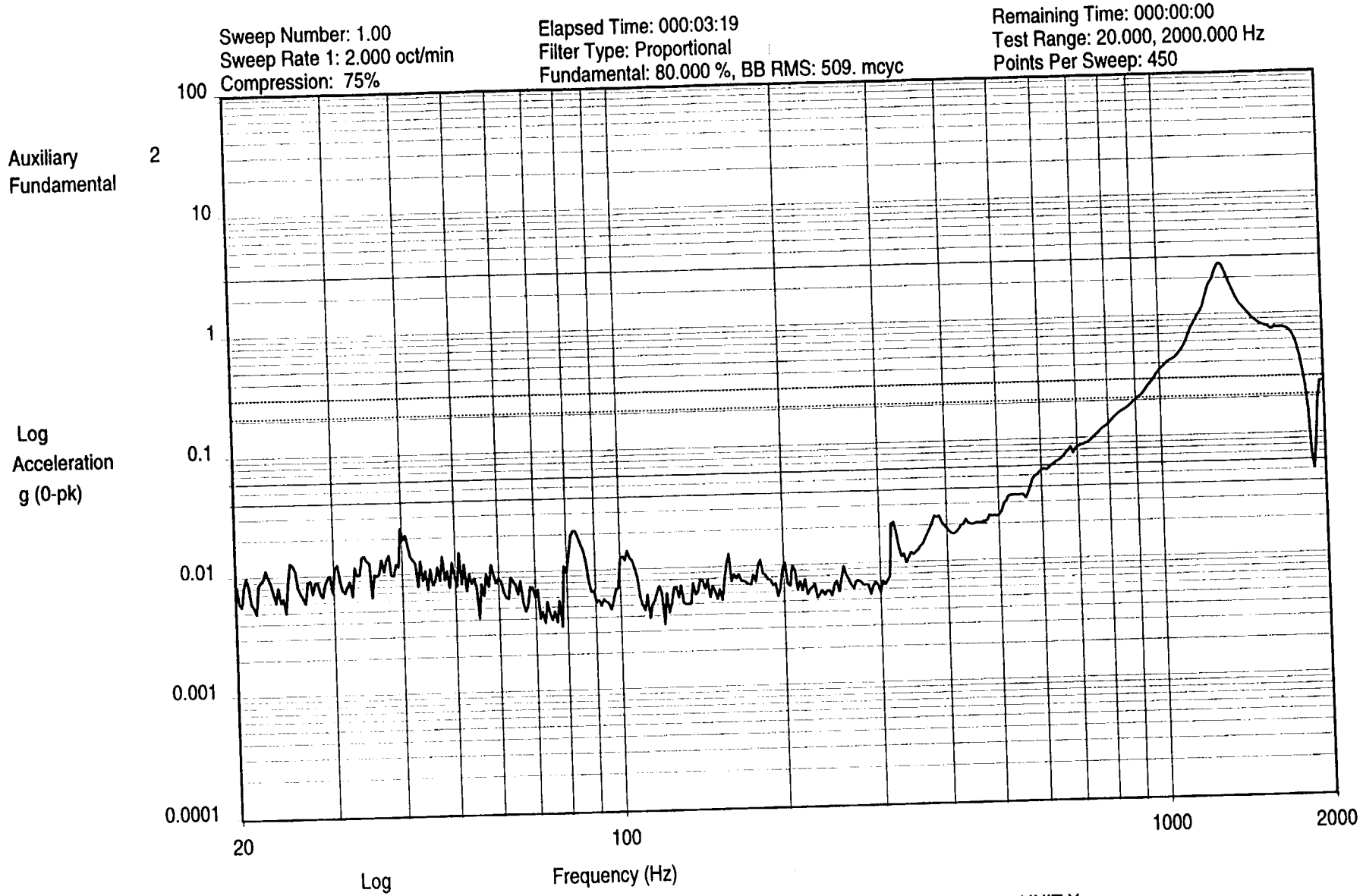
11-12-98

15:49:00
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

ENG 217



15:49:05
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

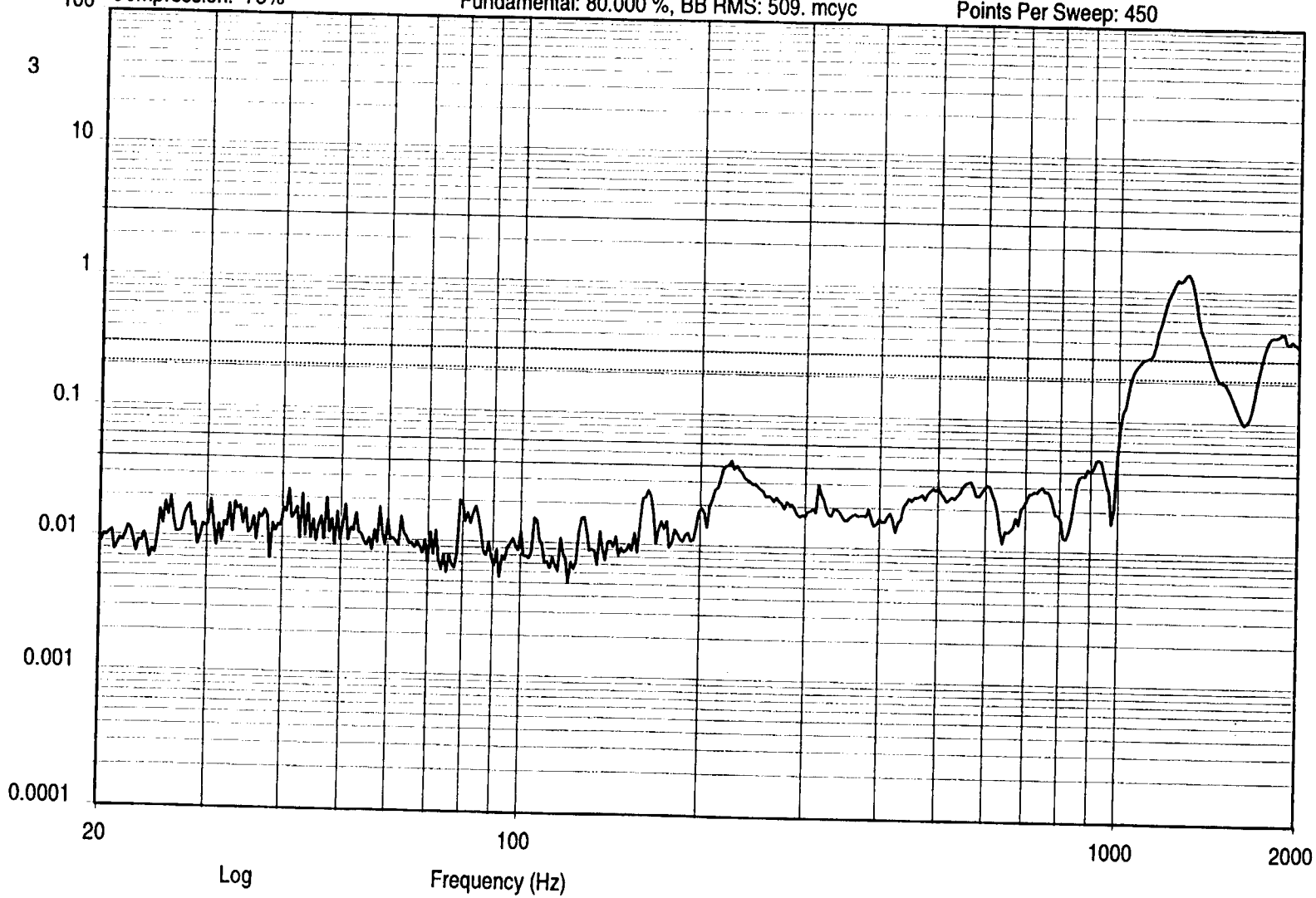
11-12-98

ENG 217

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



15:49:08
12-Nov-1998

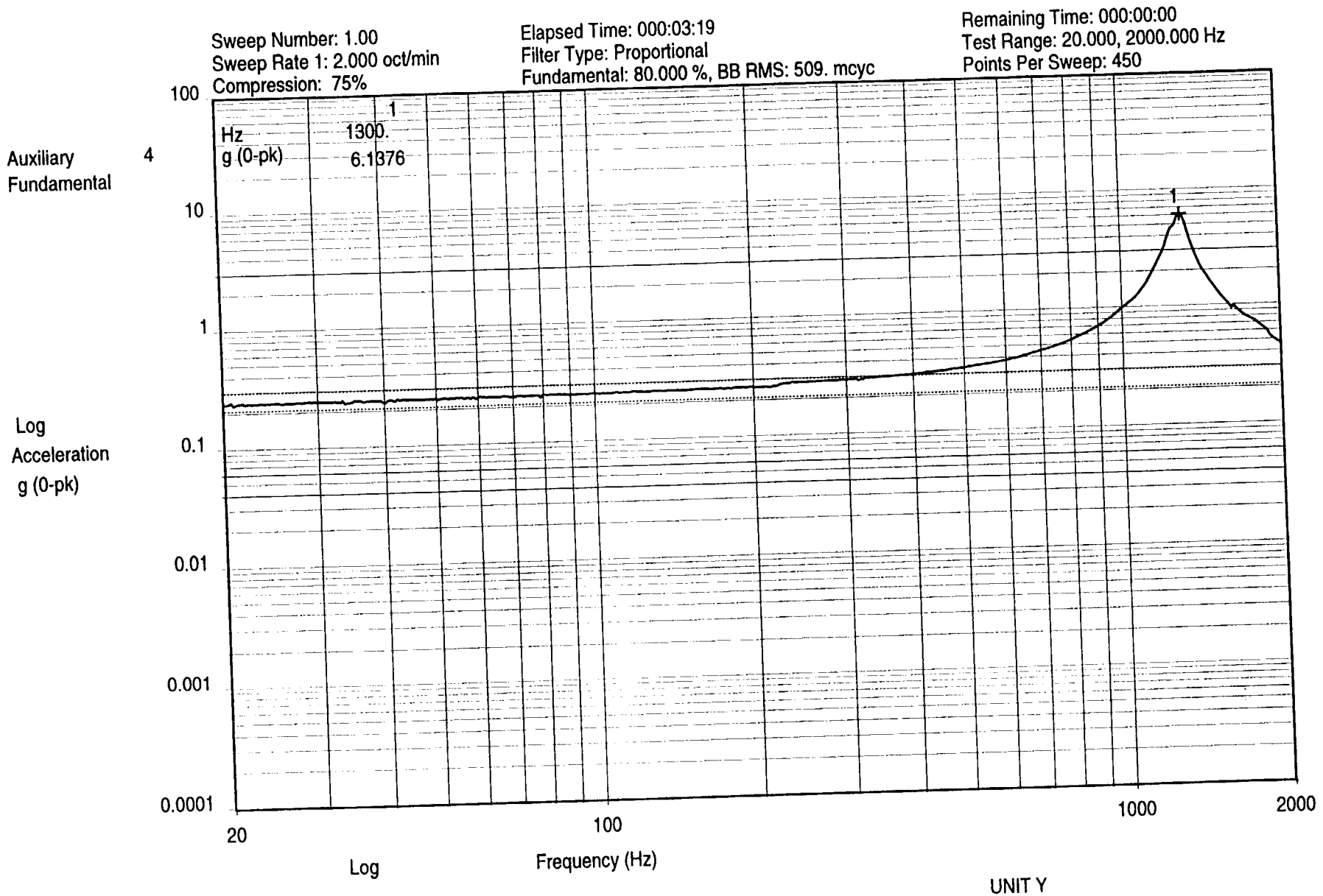
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

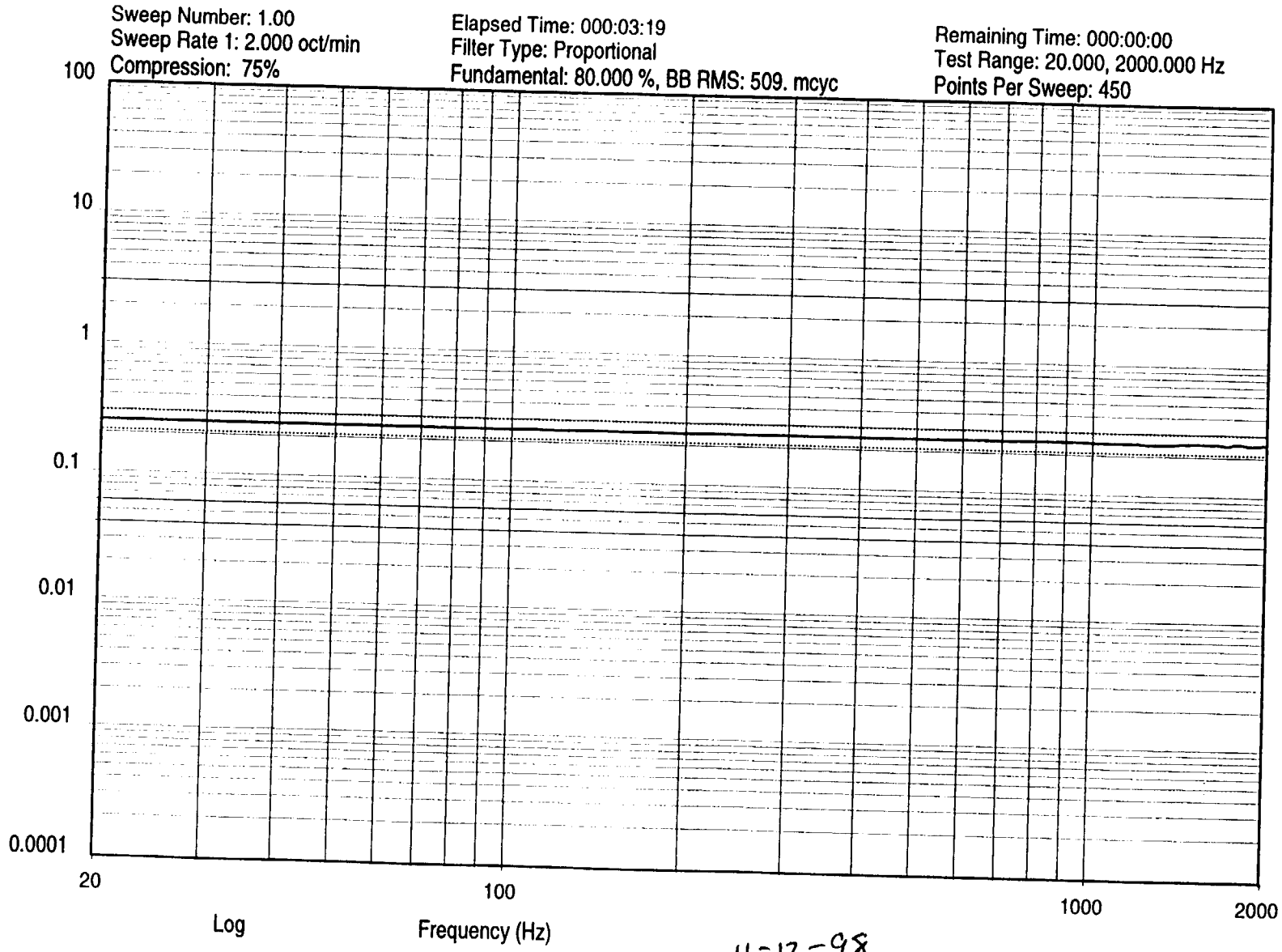
Sine Test Name: PLO.tmp

11-12-98

ENG 217 1A 200

UNIT Z


Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%
Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc
Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450
Auxiliary
Fundamental
4
Hz
g (0-pk)
1
1300.
6.1376
100
10
1
0.1
0.01
0.001
0.0001
Log
Acceleration
g (0-pk)
20
100
1000
2000
Log
Frequency (Hz)
UNIT Y
15:49:25
12-Nov-1998
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Y AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp
11-12-98
ENG 217 QA



11-12-98

16:33:45
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09

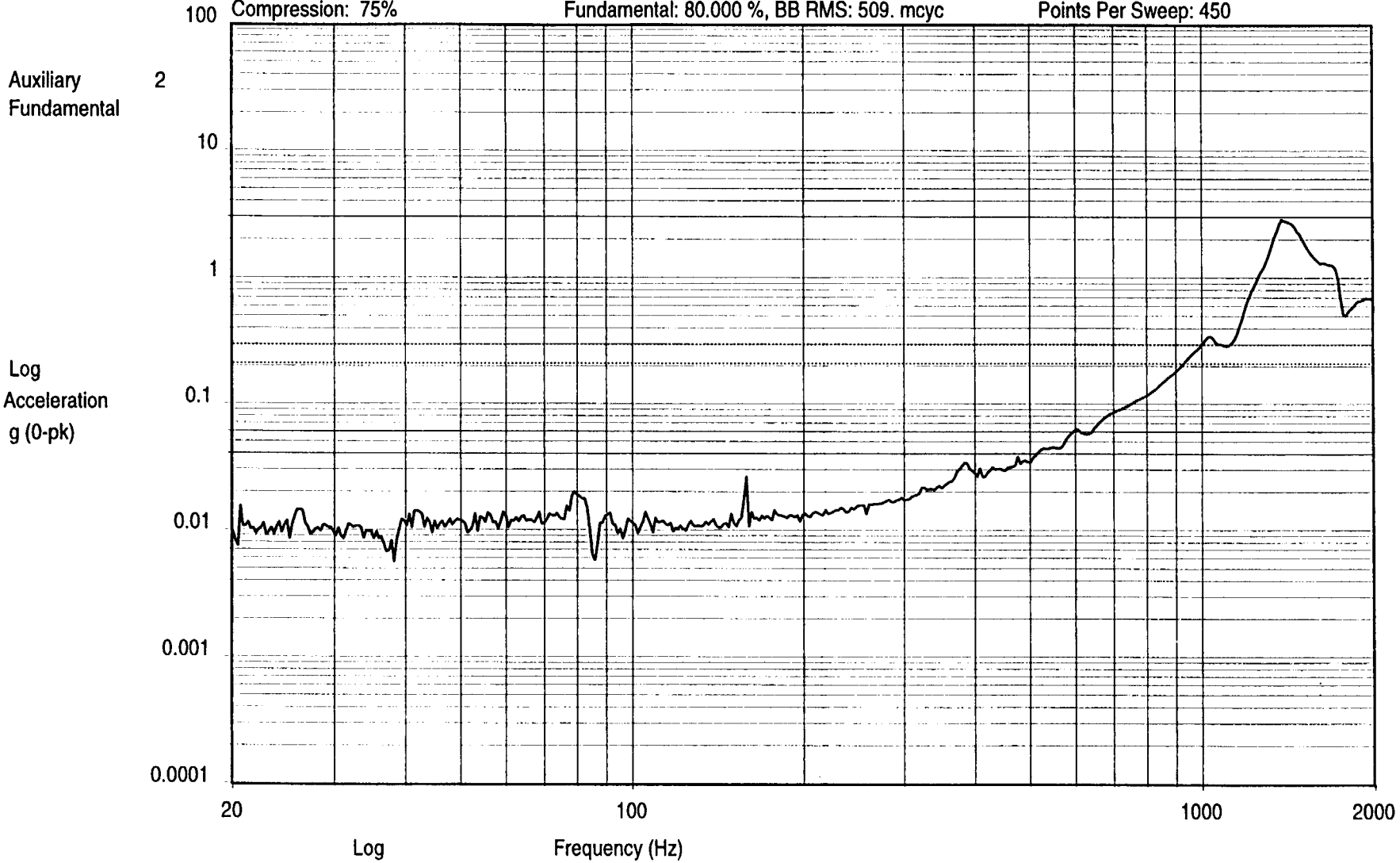
Sine Test Name: PLO.tmp

ENG 217 A1

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



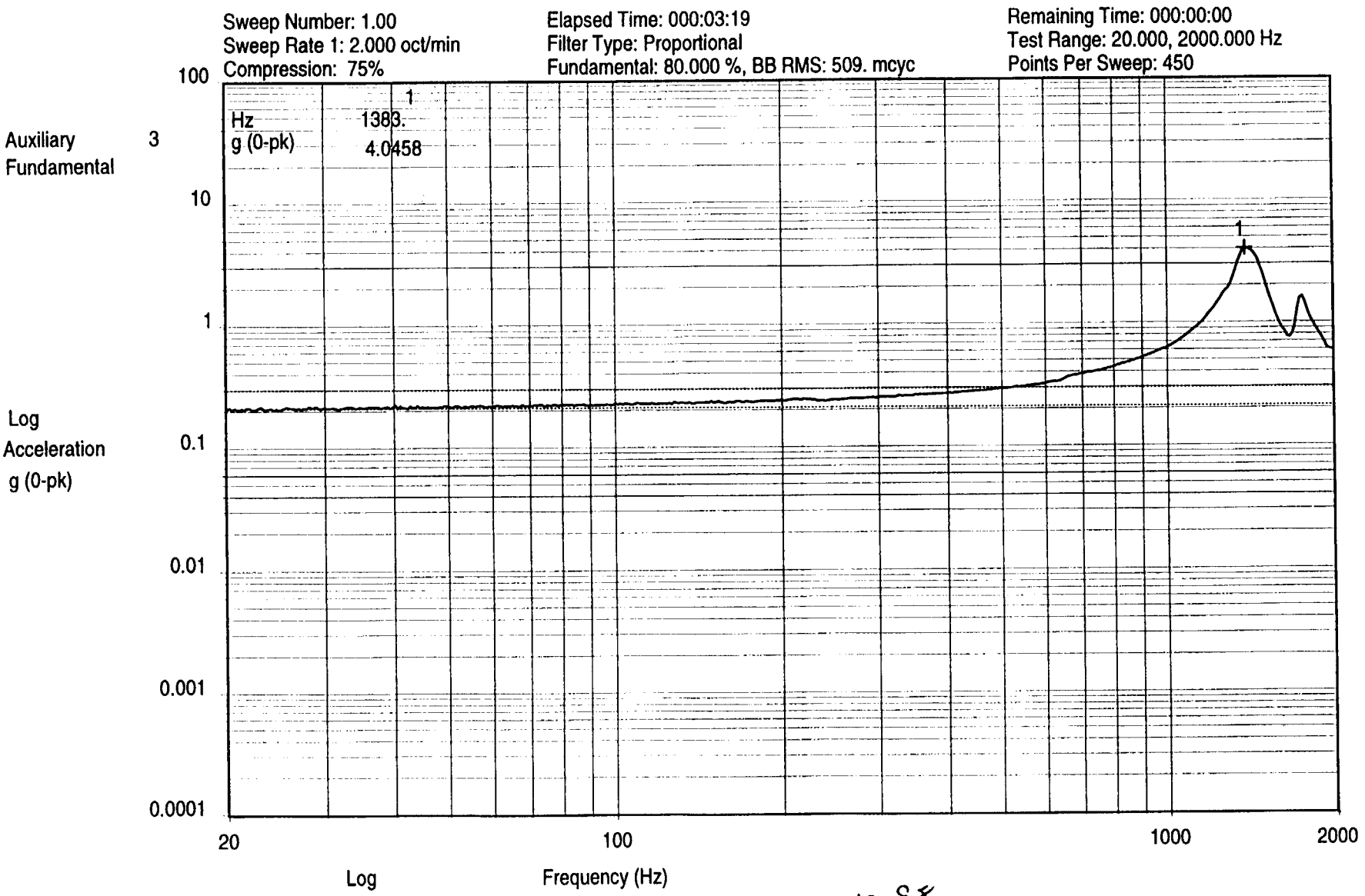
16:33:50
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

ENG 217 191 AT

UNIT X



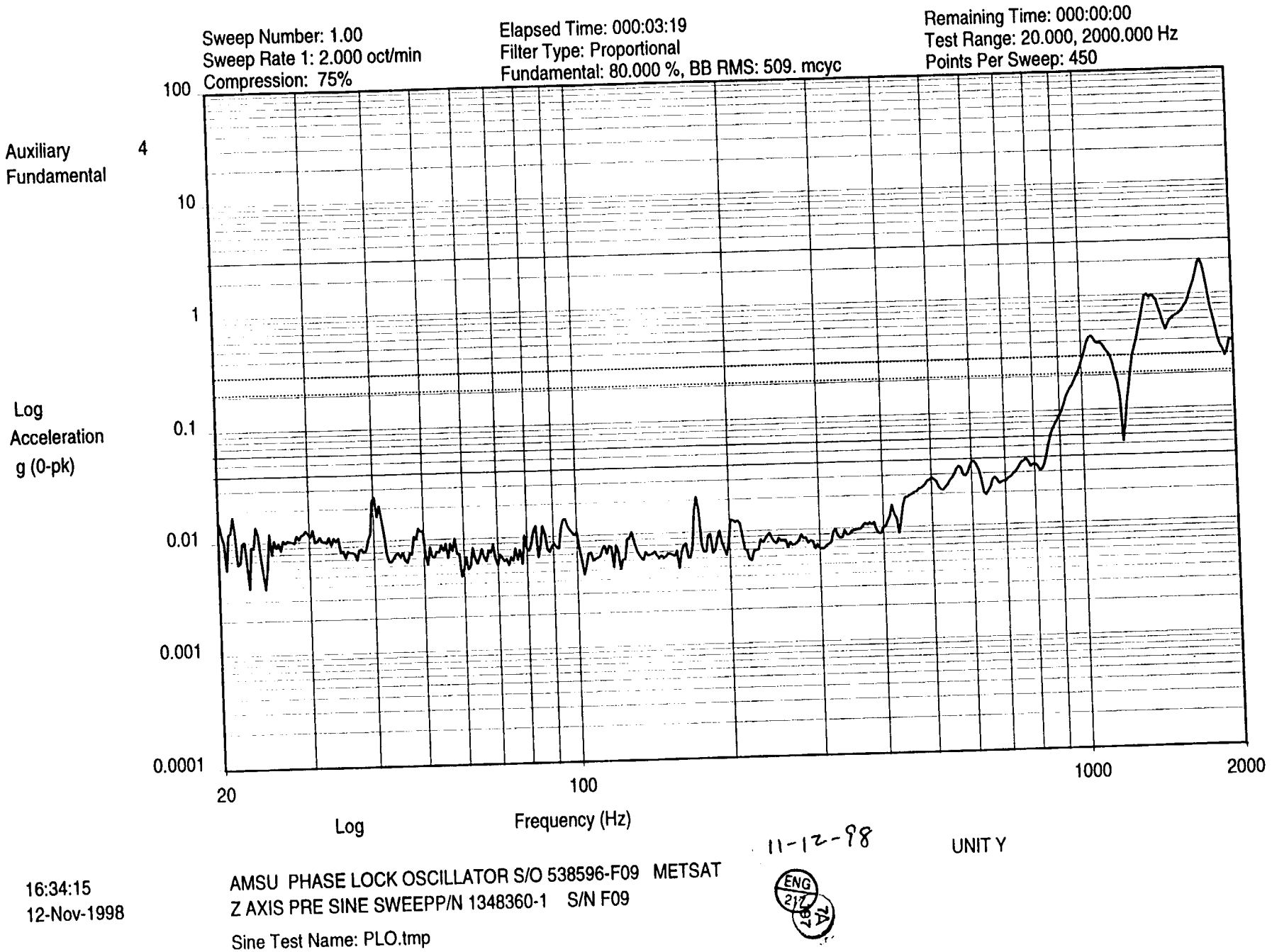
11-12-98

UNIT Z

16:34:10
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

ENG 21/2 A-7A



11-12-98

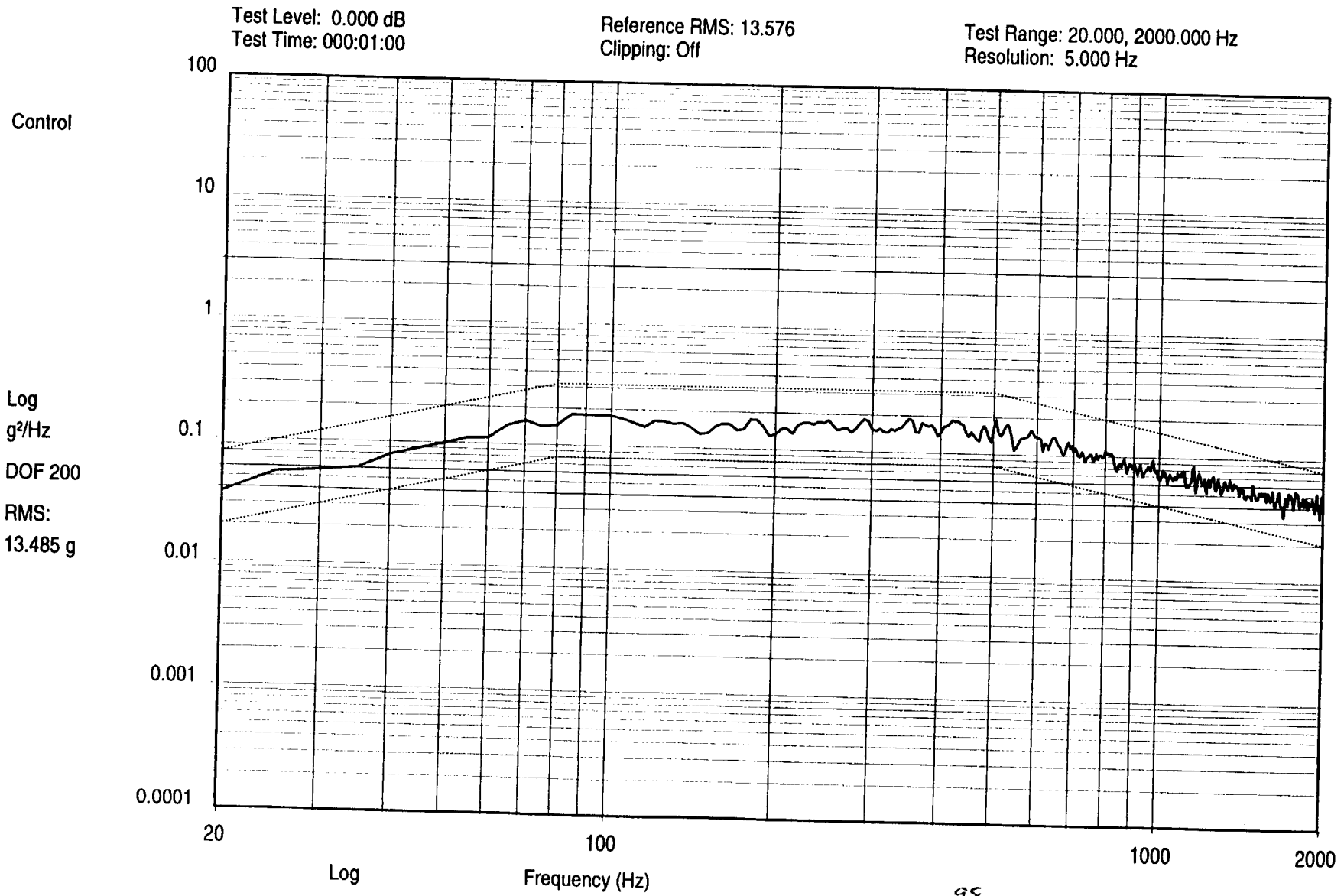
UNIT Y

16:34:15
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS PRE SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

ENG 217 TAB



16:46:16
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Z AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

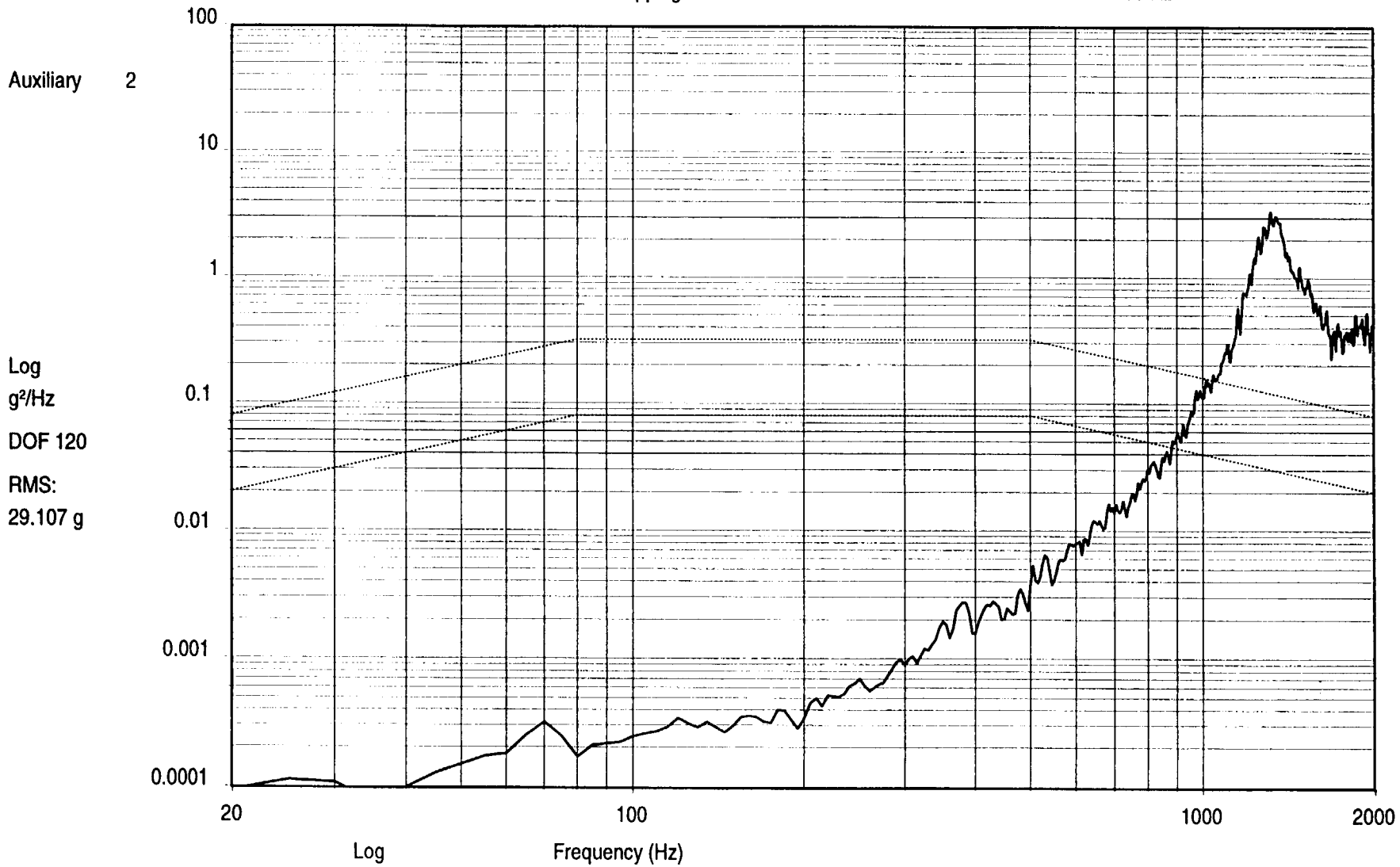
11-12-98

ENG 2VT 19 AT

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



16:46:20
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Z AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

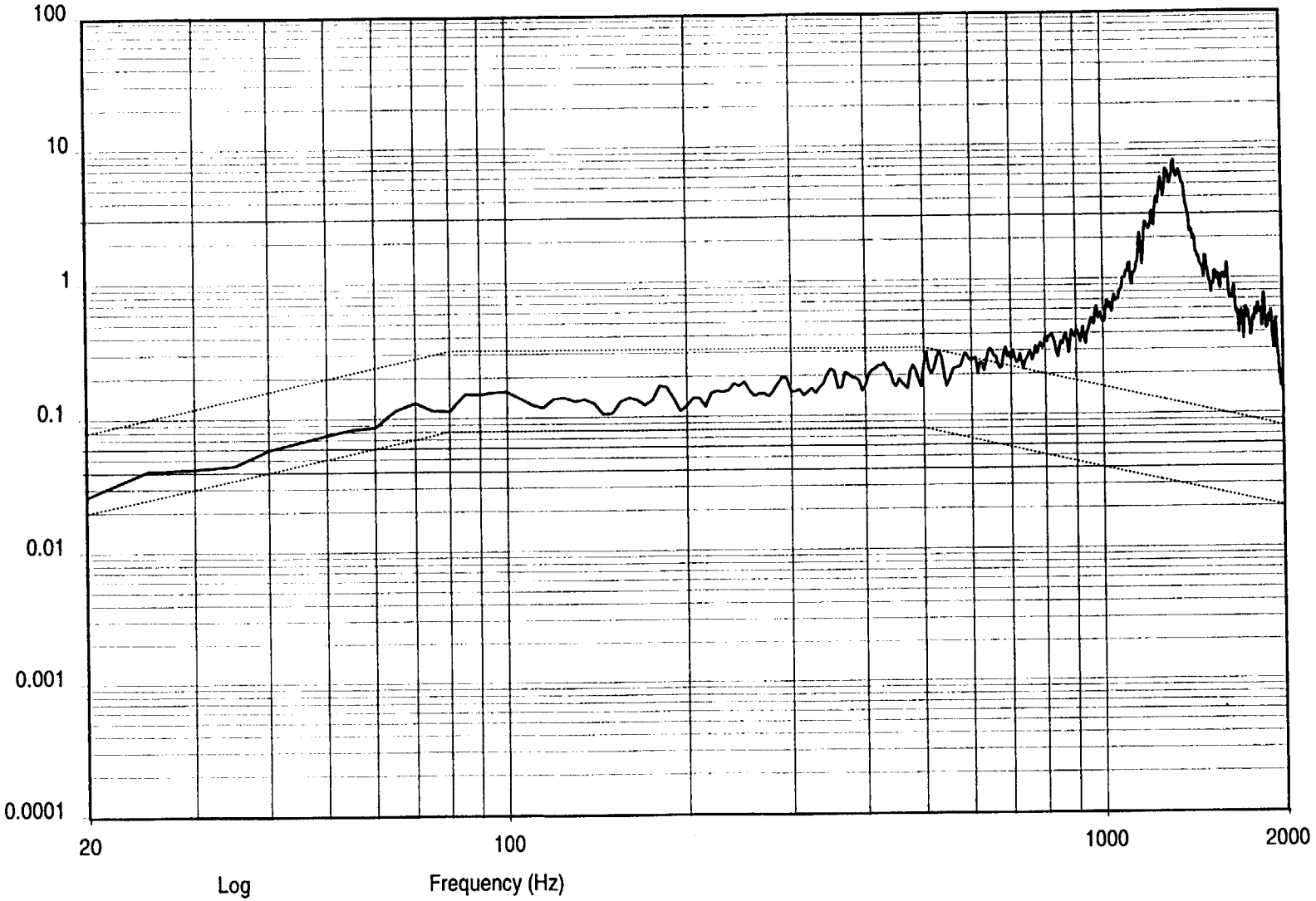
UNIT X AXIS
11-12-98

ENG 217 197A

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



16:46:24
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Z AXIS TEST P/N 1348360-1 S/N ,F09

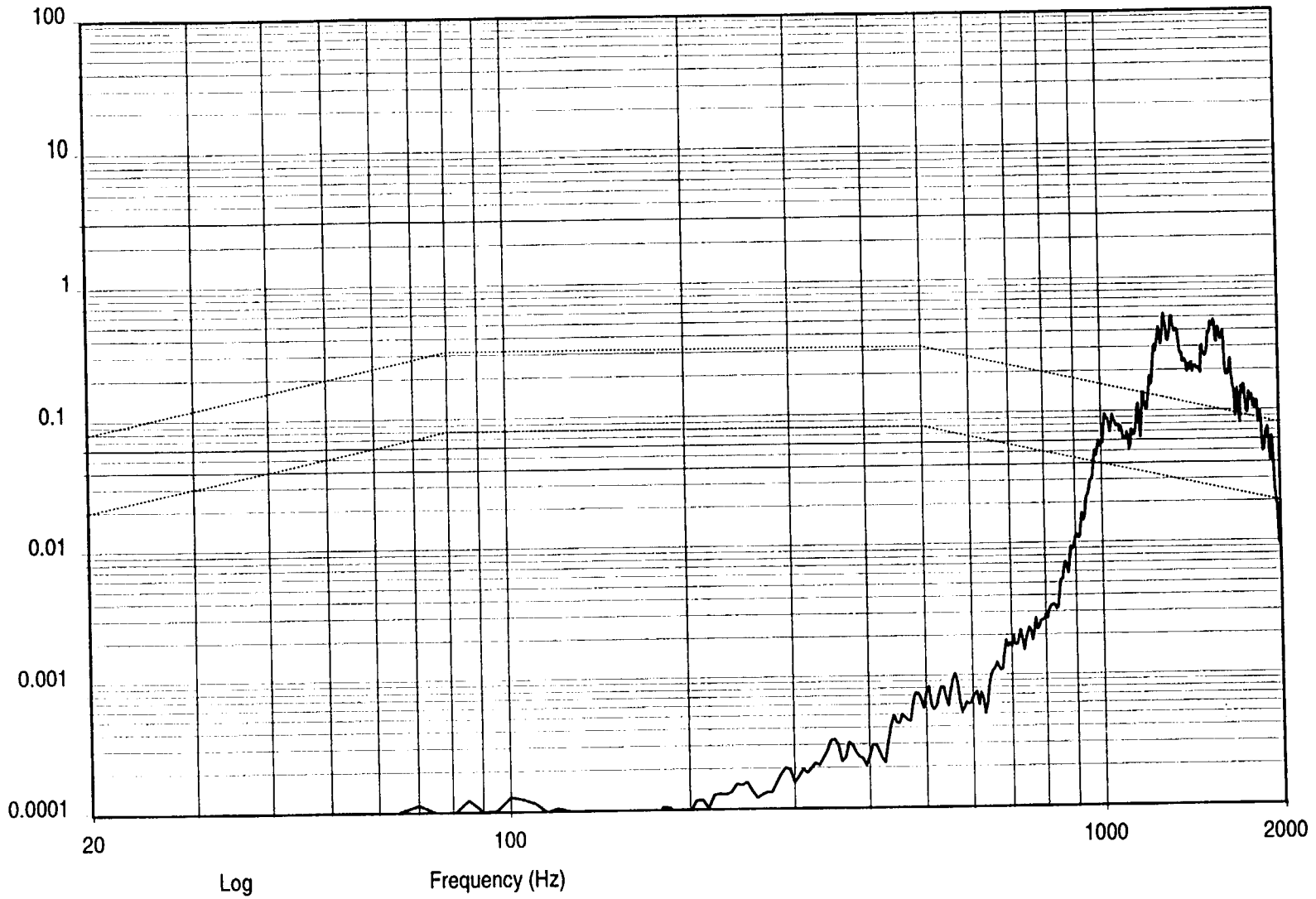
Test Name: PLO.tmp

UNIT Z AXIS
11-12-98
ENG
217

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

Log
g²/Hz

DOF 120

RMS:
13.797 g

16:46:28
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538596-F09 METSAT
Z AXIS TEST P/N 1348360-1 S/N ,F09

Test Name: PLO.tmp

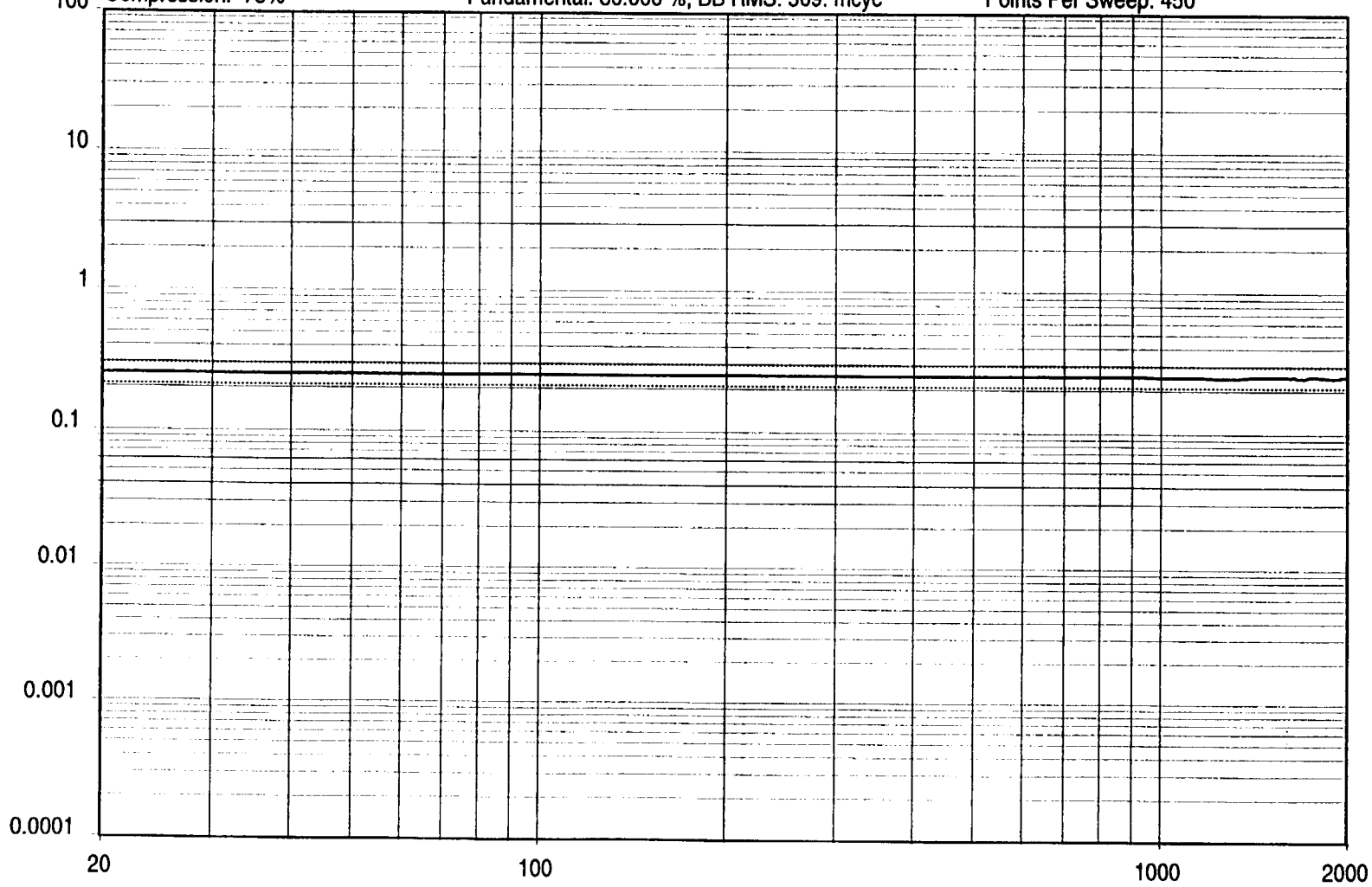
UNIT Y AXIS
11-12-98

ENG

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11-12-98

ENG 21 FA 197

16:58:16
12-Nov-1998

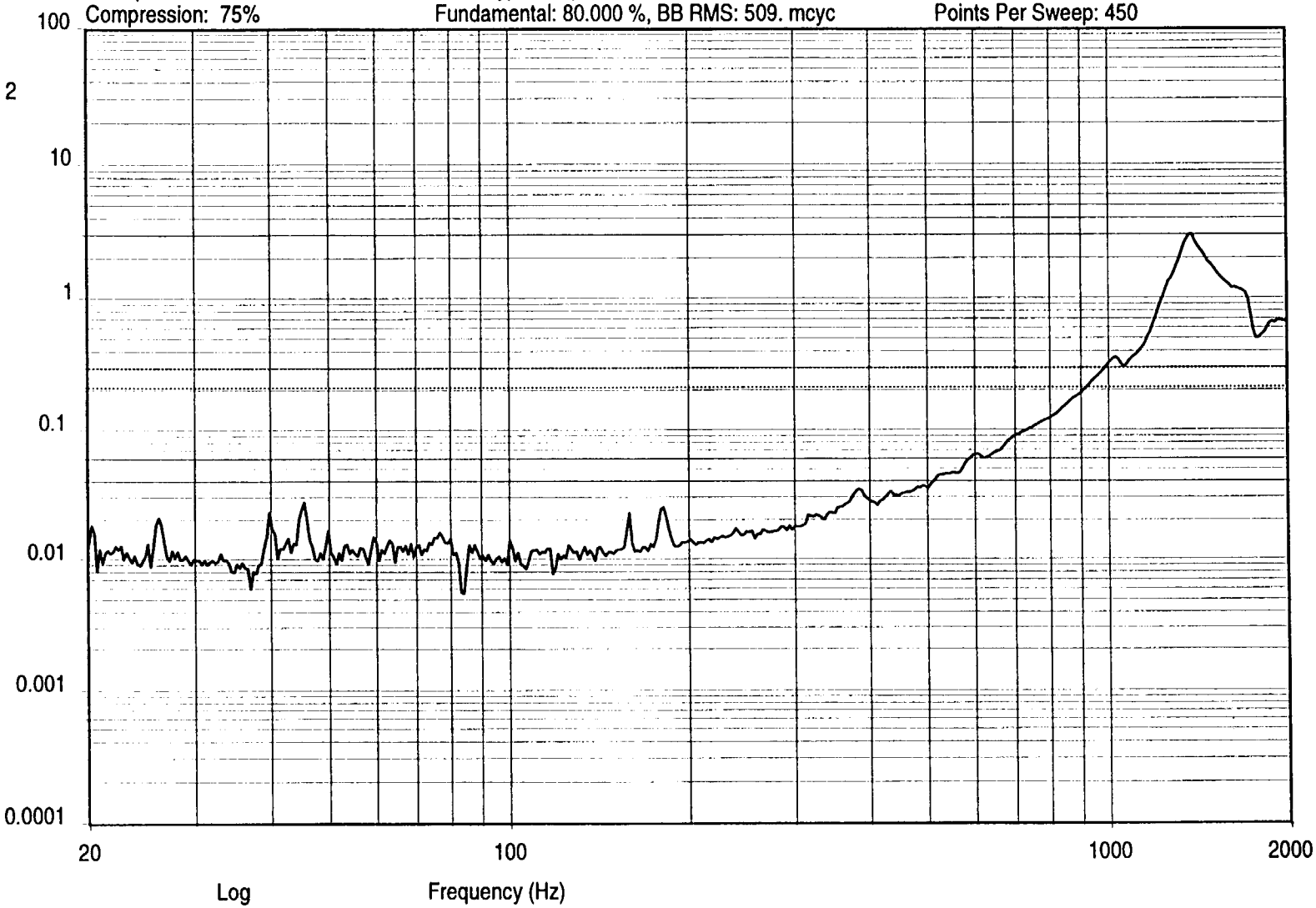
AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



16:58:21
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

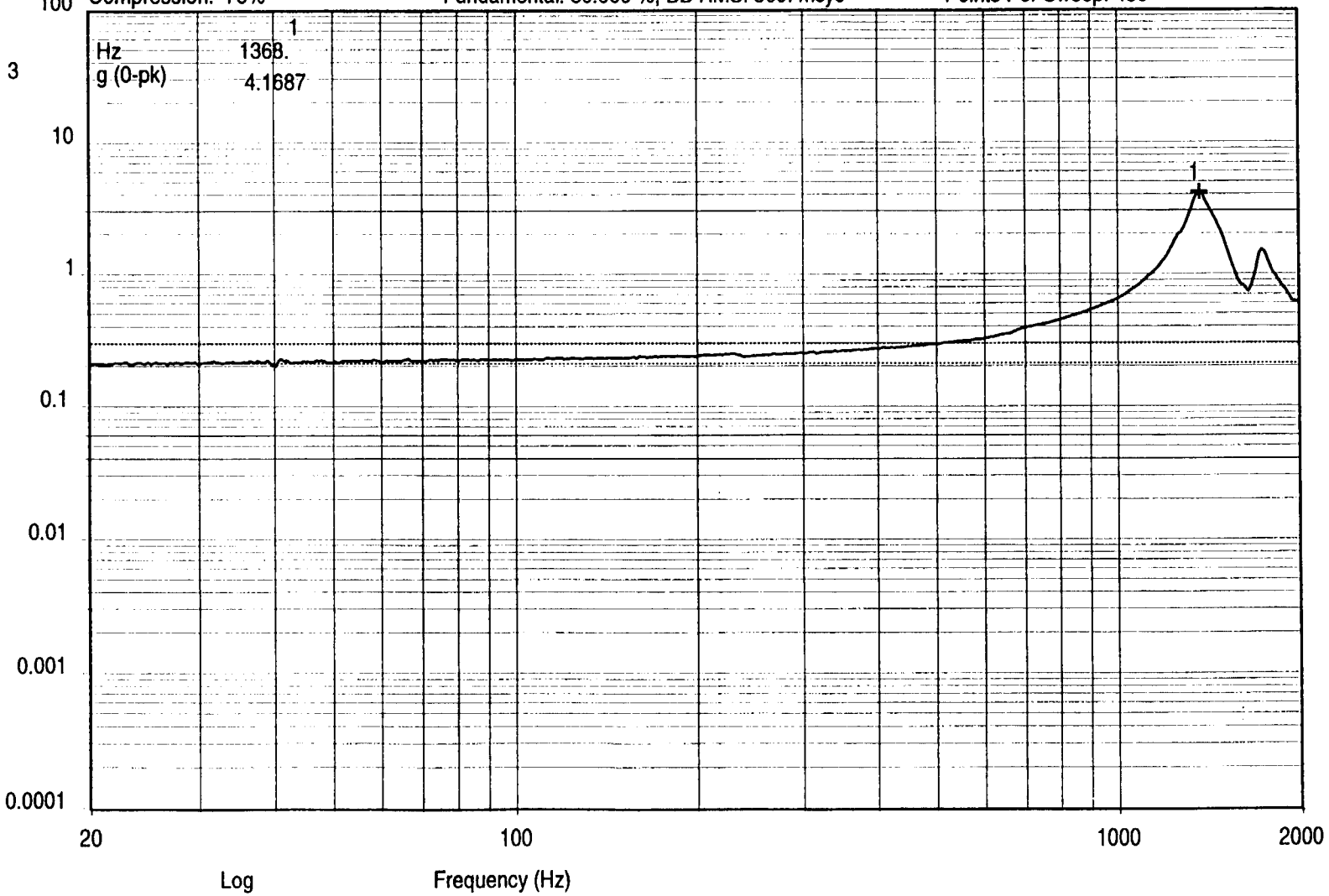
ENG 217 7A 197

UNIT X

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



16:58:34
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS POST SINE SWEEPP/N 1348360-1 S/N F09
Sine Test Name: PLO.tmp

11-12-98

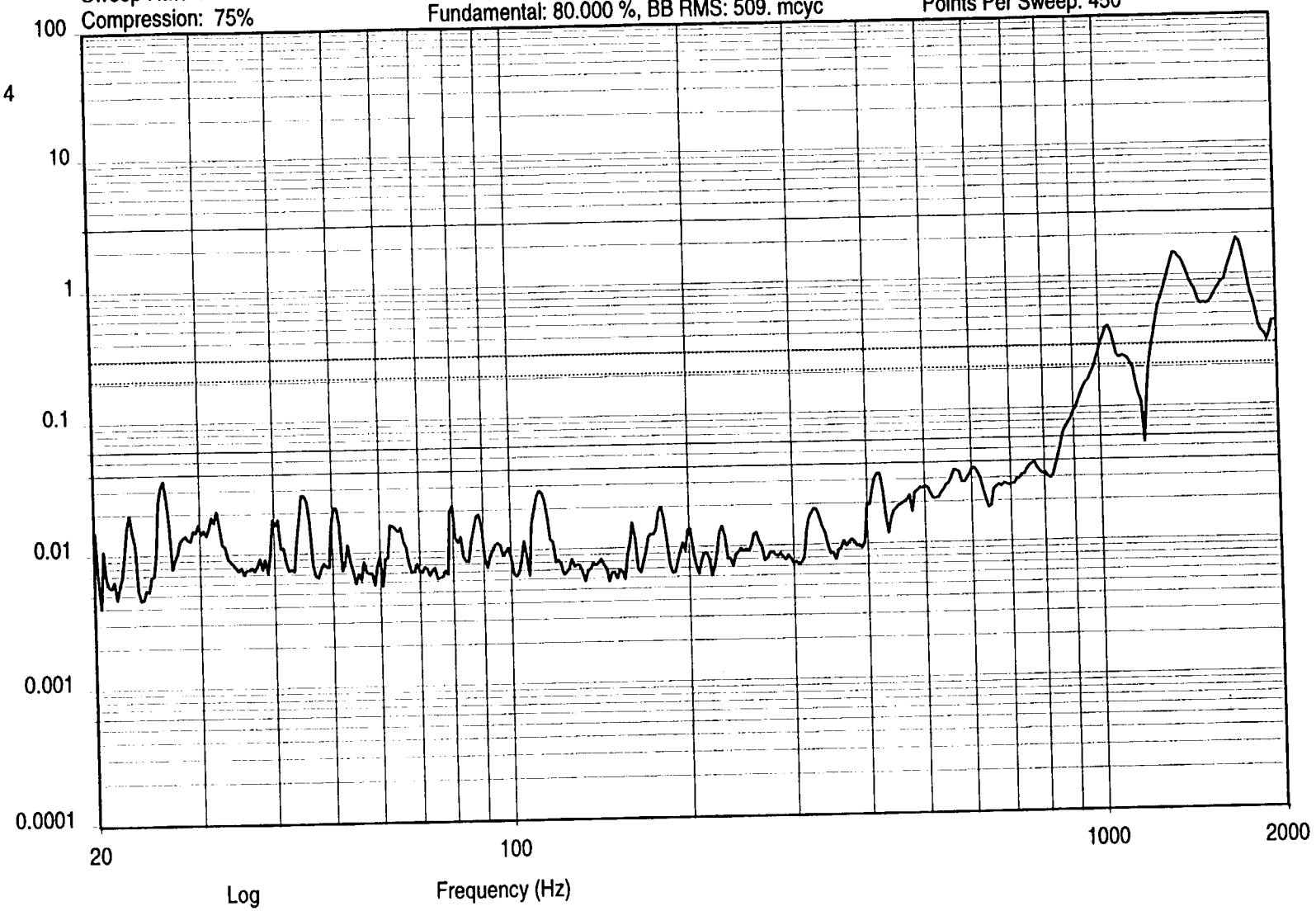
ENG 217 74 57

UNIT Z

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



UNIT Y

16:58:38
12-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538596-F09 METSAT
Z AXIS POST SINE SWEEPP/N 1348360-1 S/N F09

Sine Test Name: PLO.tmp

11-12-98

ENG 217 TA 197

Section 2B: Acceptance Level Vibration - F10

This section includes the data from the limited functional tests which take place before and throughout vibration, and the vibration-specific. The following table summarizes the results of the limited functional test.

Test	Expected Value	Post X axis	Post Y axis	Post Z axis
Output Frequency	57290344 ± 200 kHz	57290339 kHz	57290360 kHz	57290376 kHz
Output Power	18.5 dBm ± 1.5 dB	17.9 dBm	17.9 dBm	17.3 dBm

The following pages contain the raw data.

TEST DATA SHEET 8B

Limited Functional Test (Paragraph 4.2.3)

Post X-Axis LPT

Test Setup Verified: O Luis
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	1mVac	Pass
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	1mVac	Pass

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	15.00 V	PASS
	Voltage Meter 2	-15 ± 0.1 V	-15.02 V	PASS
	Current Meter 1	600 mA max.	534 mA	PASS
	Current Meter 2	100 mA max.	-70. mA	PASS
9	Output Frequency	57.290344 ± .0001 GHz	57.290339	PASS
10	Output Power	18.5 dBm ±1.5 dB	17.89 dBm	PASS

92 (45/T) 11/4/98

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/4/98
(45/T)

Shop Order No.: 538595

Operation: 0150

Unit Serial No.: F10

Date: 11/4/98

Test Engineer: O Luis

Quality Control: (7A 197) 11/4/98

Govt. Rep.: Timothy Lee 11/5/98

TEST DATA SHEET 8C

Limited Functional Test (Paragraph 4.2.3)

Post Y-Axis LPT

Test Setup Verified: _____
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	1mVac	Pass
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	1mVac	Pass

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	15.00 V	Pass
	Voltage Meter 2	-15 ± 0.1 V	-15.08 V	Pass
	Current Meter 1	600 mA max.	535 mA	Pass
	Current Meter 2	100 mA max.	-70 mA	Pass
9	Output Frequency	57.290344 ± .0001 GHz	57.29033 60	Pass
10	Output Power	18.5 dBm ±1.5 dB	17.89 dBm	Pass

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/4/98

(45/1)

Shop Order No.: 538595

Operation: 0150

Unit Serial No.: F10

Date: 11/4/98

Test Engineer: _____

Quality Control: (7A 197) 11/4/98

Govt. Rep.: Dorothy Lee 11/4/98

TEST DATA SHEET 8D

Limited Functional Test (Paragraph 4.2.3)

Post Z-Axis LPT

Test Setup Verified: D Pires
Signature

Paragraph 4.2.3.2:

Step	Test		Required	Measurement	Pass/Fail
3	Potential Difference				
	From	To			
	Power Supply RTN	Test Platform *	< 1.0 Vac	N/A	N/A
	Power Supply RTN	Frequency Counter Chassis	< 1.0 Vac	1mVac	Pass
	Power Supply RTN	Power Meter Chassis	< 1.0 Vac	1mVac	Pass

Step	Test	Expected	Measured	Pass/Fail
8	Voltage Meter 1	+15 ± 0.1 V	15.01 V	PASS
	Voltage Meter 2	-15 ± 0.1 V	-15.05 V	PASS
	Current Meter 1	600 mA max.	535 mA	PASS
	Current Meter 2	100 mA max.	70 mA	PASS
9	Output Frequency	57.290344 ± .0001 GHz	57.2903376 GHz	PASS
10	Output Power	18.5 dBm ±1.5 dB	17.26 dBm	PASS

* If used. N/A this line entry if not used in test. Example: If PLO is to be vibrated and unit tested "in-place" after each axis, check potential difference between shaker table and power supply RTN.

11/4/98

Shop Order No.: 538595

Operation: 0150

Unit Serial No.: F10

Date: 11/4/98

Test Engineer: D Pires

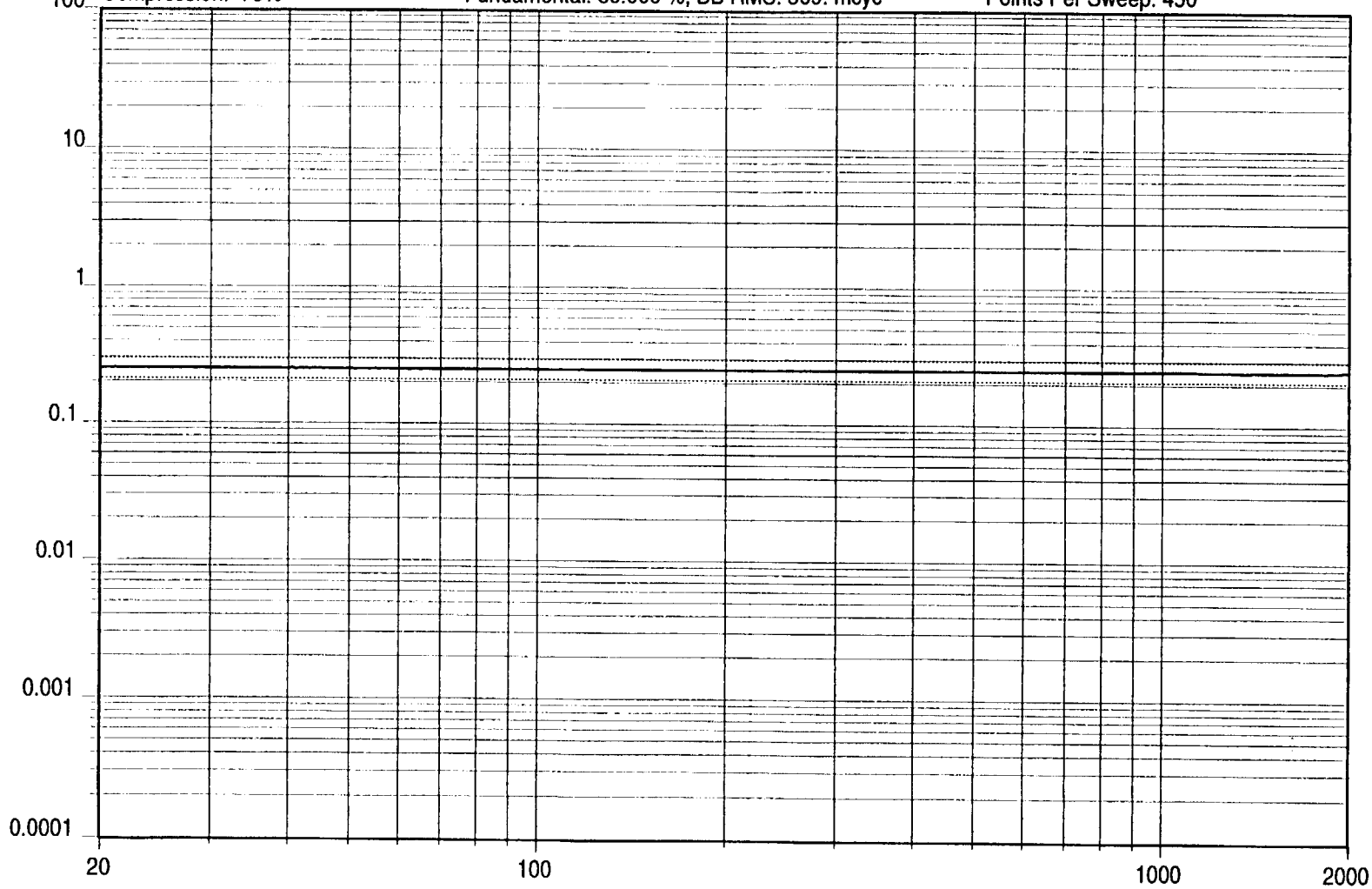
Quality Control: 11/4/98

Govt. Rep.: 11/5/98

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:18
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:01
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



10:09:36
26-Oct-1998

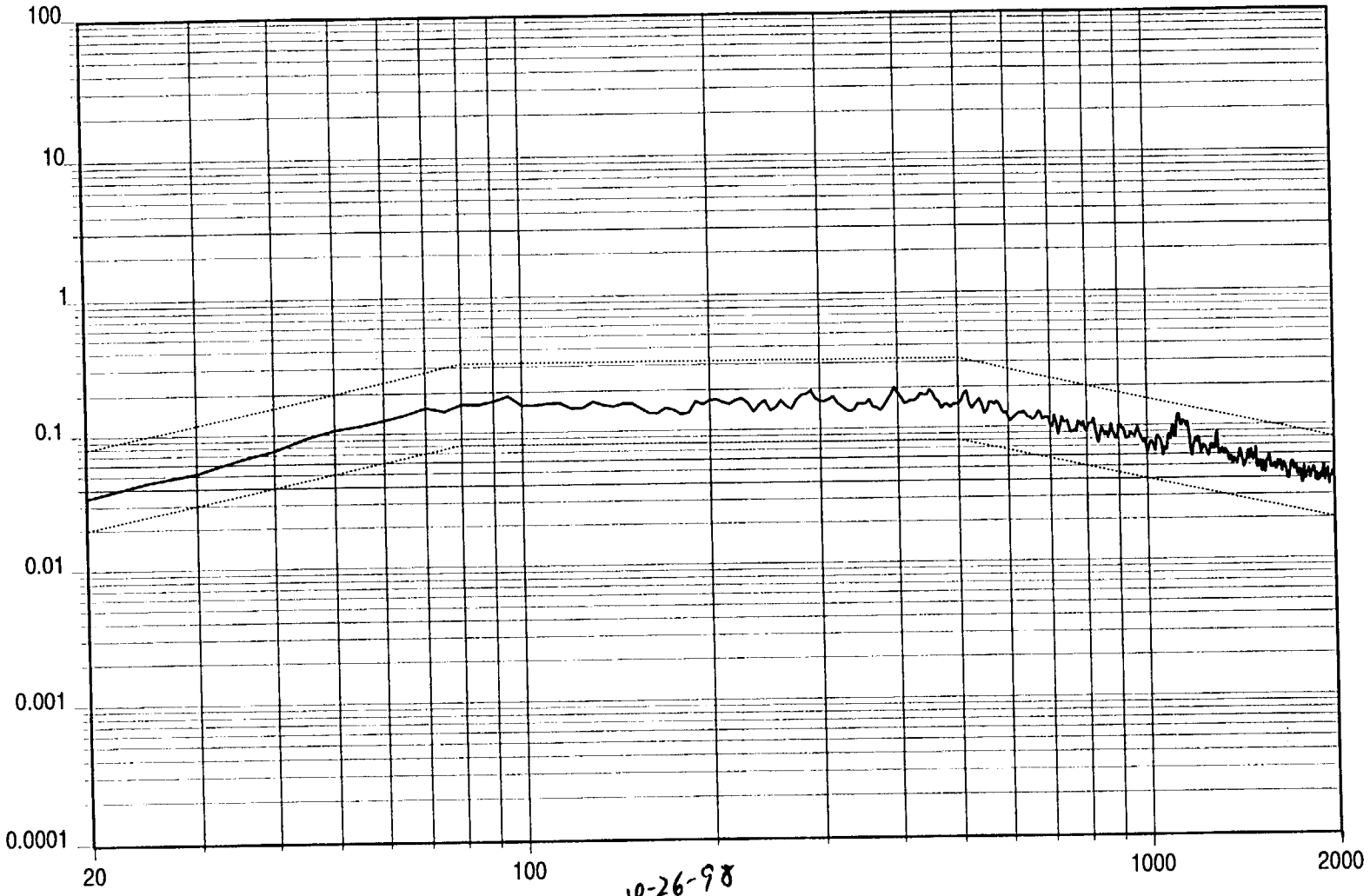
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS SYSTEM CHECKOUT P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

10-26-98
ENG 217 EoI

Test Level: 0.000 dB
Test Time: 000:01:13

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Control

Log
g²/Hz

DOF 200

RMS:
13.624 g

Log Frequency (Hz)

10-26-98

ENG 217

538595

10-26-98

ENG 217

EOT

TA 267

09:59:42
26-Oct-1998

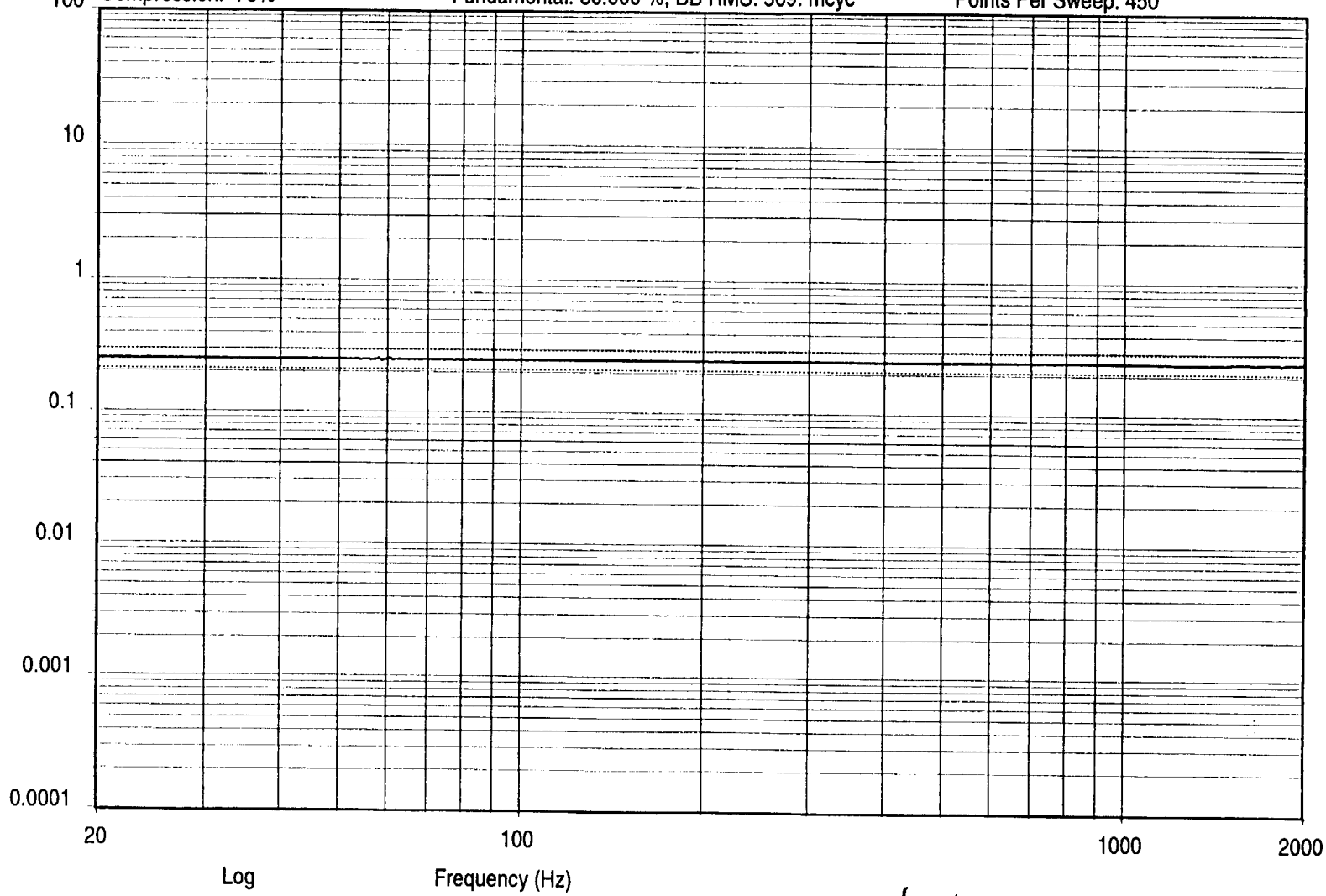
AMSU PHASE LOCK OSCILLATOR S/O ~~534921, 534922~~
Y AXIS SYSTEM CHECKOUT P/N 1348360-1 ~~S/N F08~~ ,F10

Test Name: PLO.tmp

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450

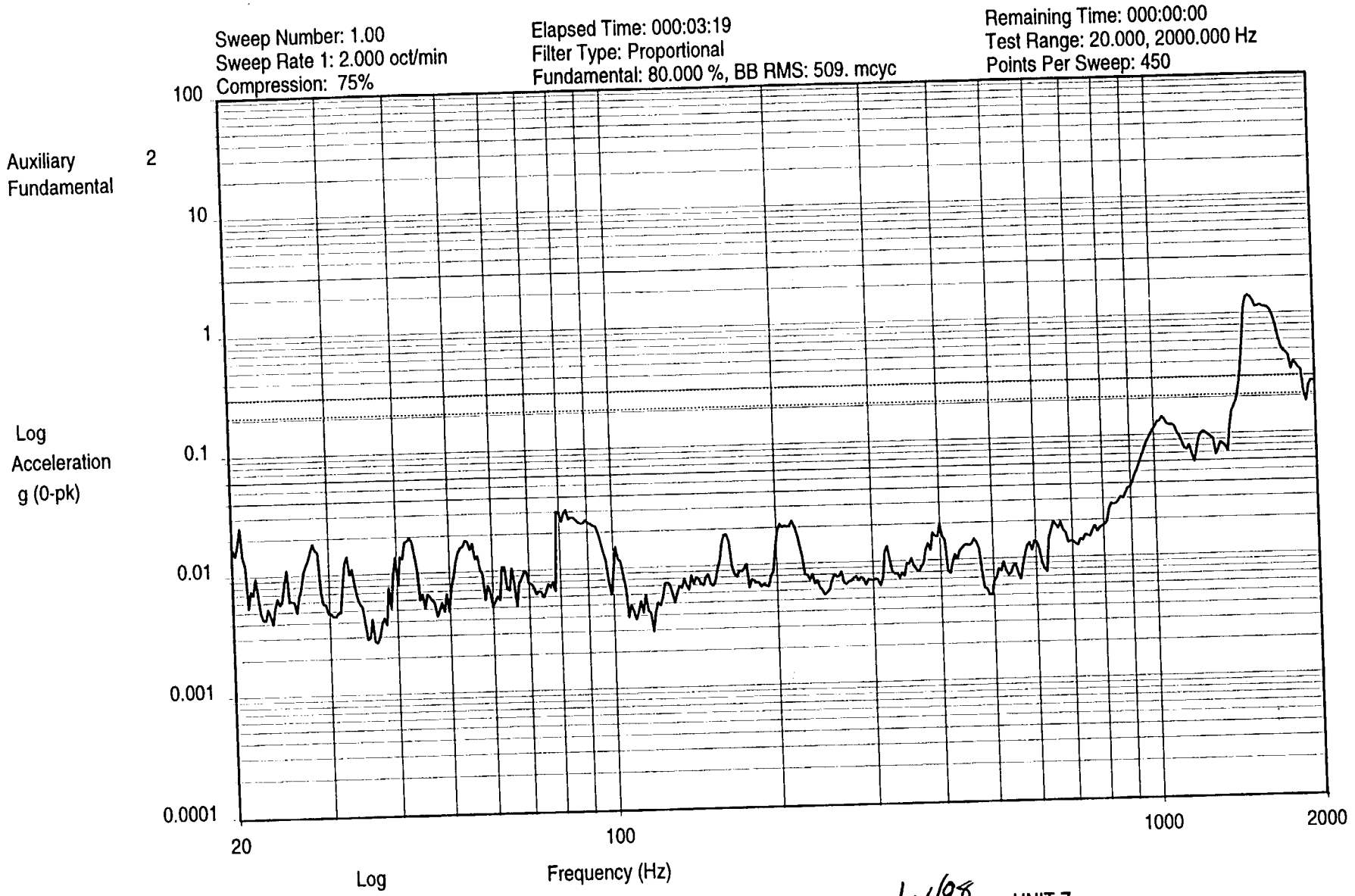


11:32:04
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
PRE Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217 10/26/98 E.o.I

74 267



11:32:09
26-Oct-1998

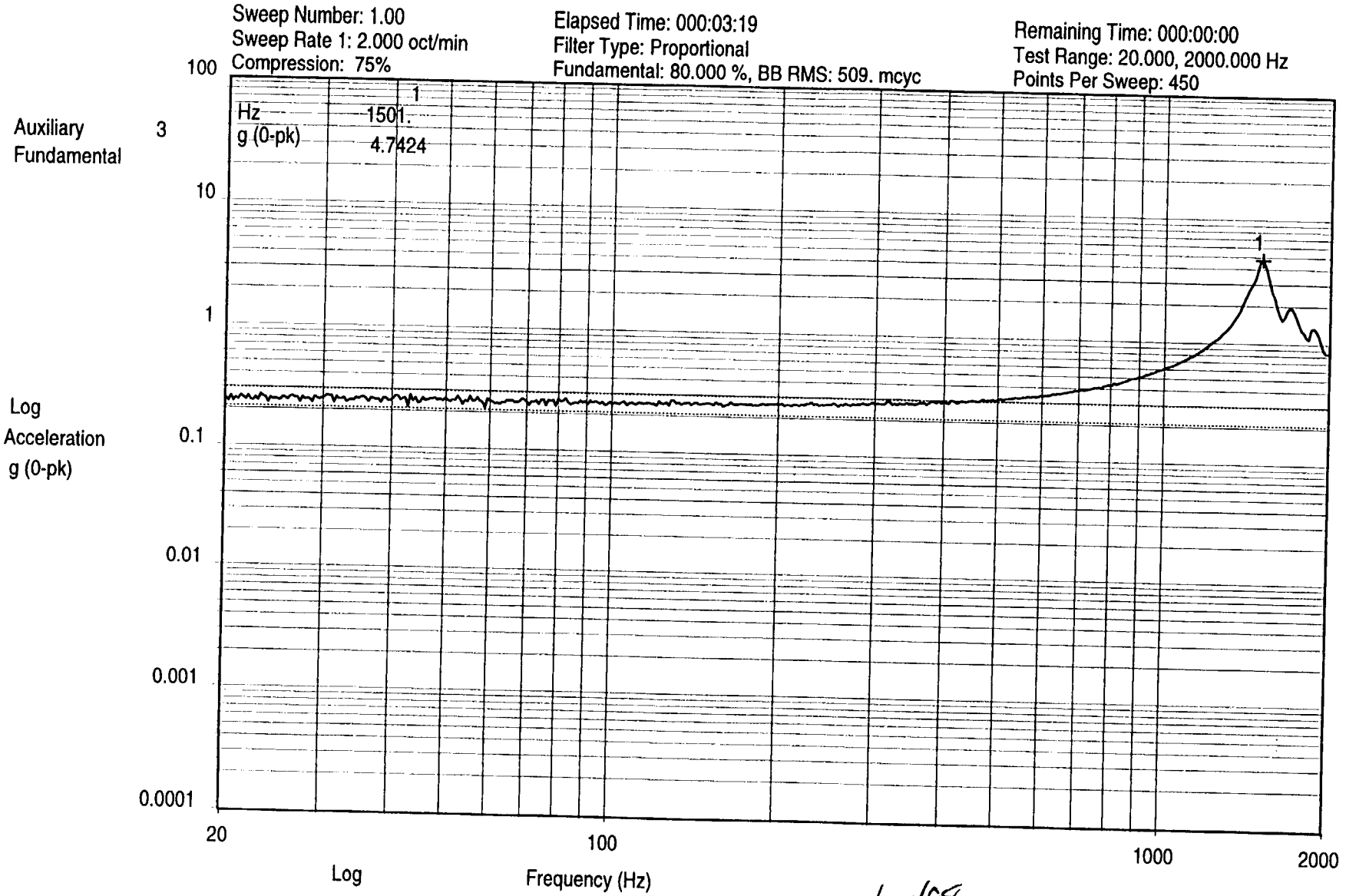
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
PRE Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

10/26/98 UNIT Z

ENG 217 EoI

7A 267



11:34:15
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
PRE Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

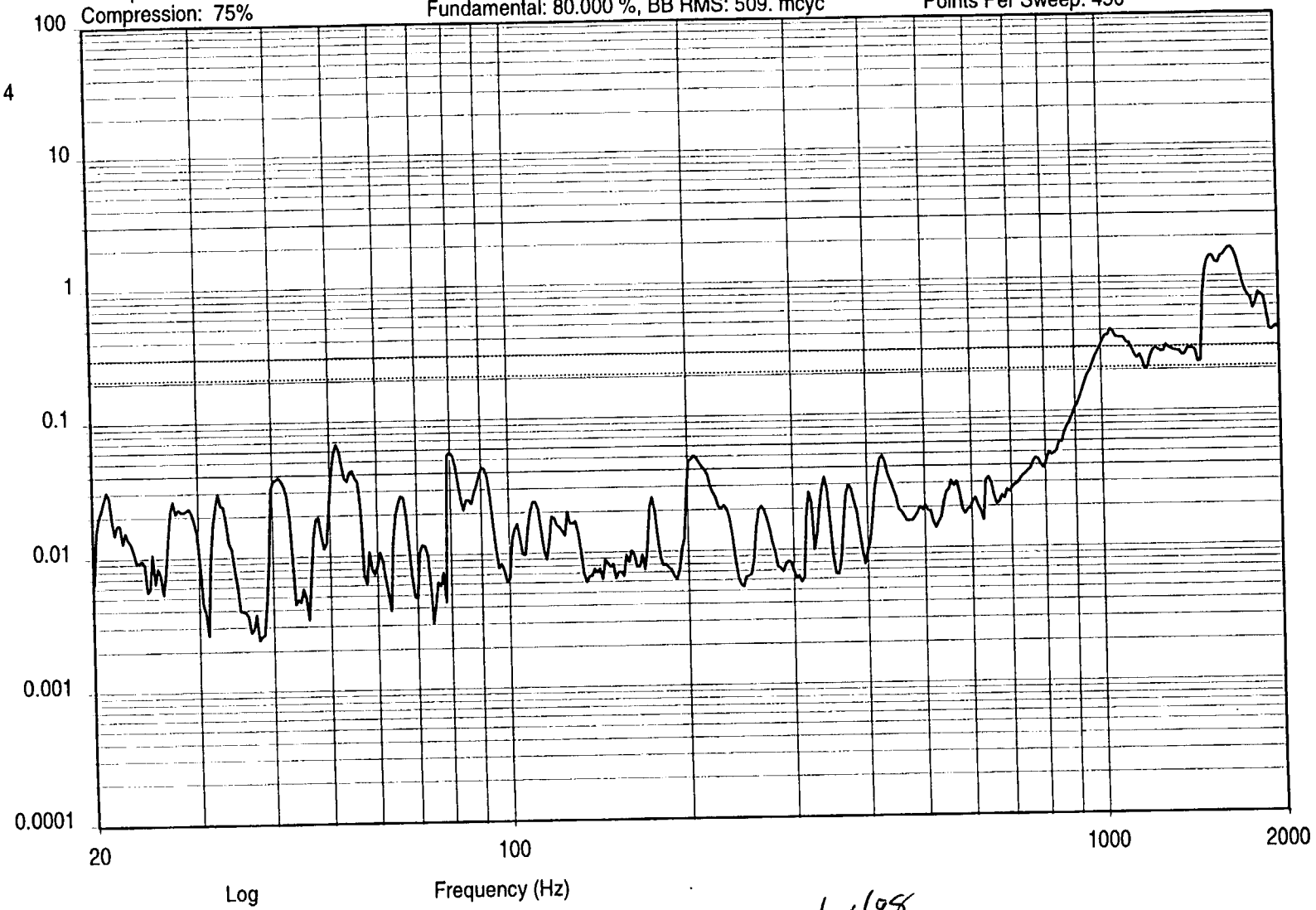
10/26/98
ENG 217
EOI
7A 267

UNIT Y

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11:32:54
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
PRE Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

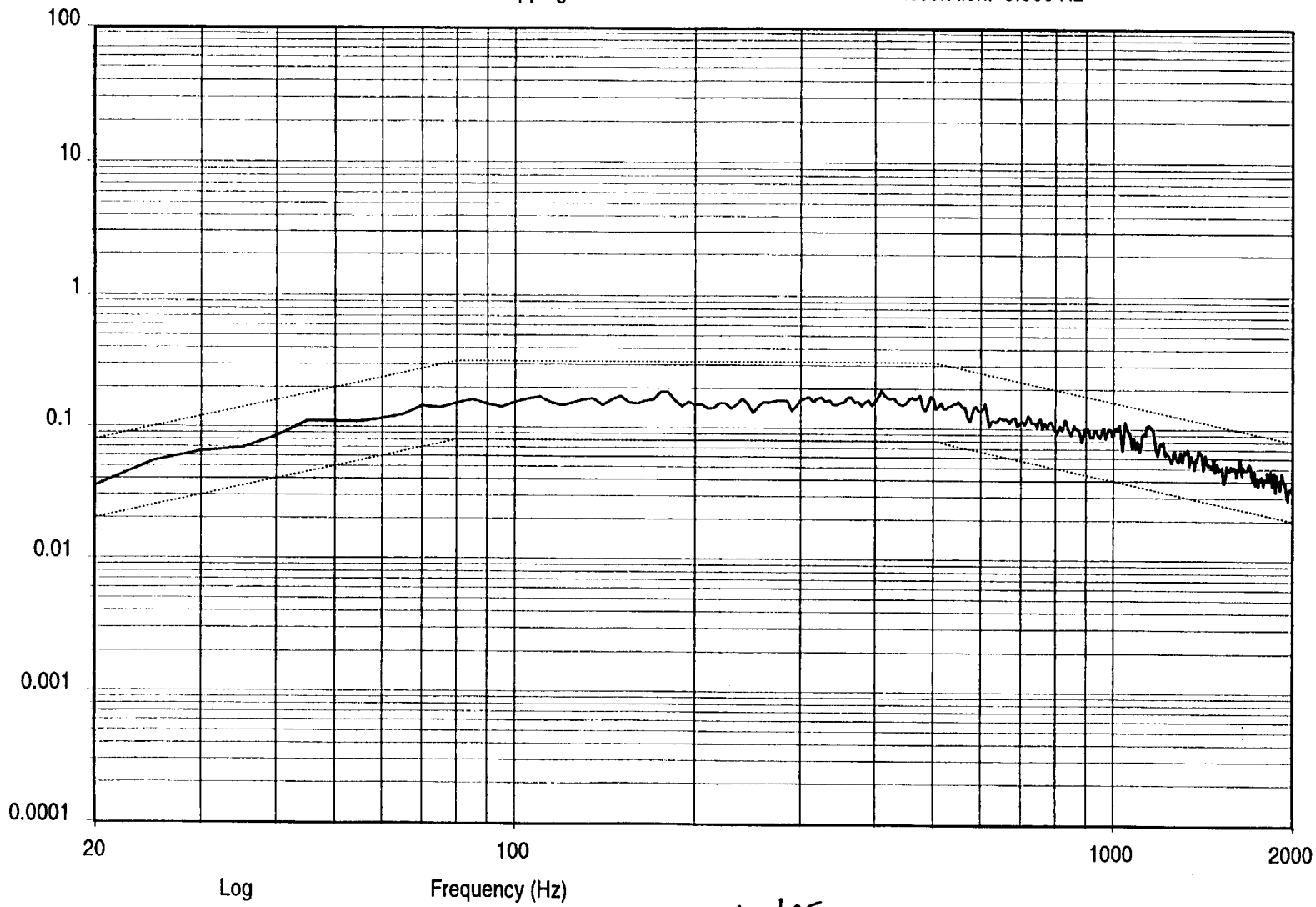
10/26/98 UNIT X

ENG 217 EoI 7A 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



11:45:44
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

12/26/98
EOI

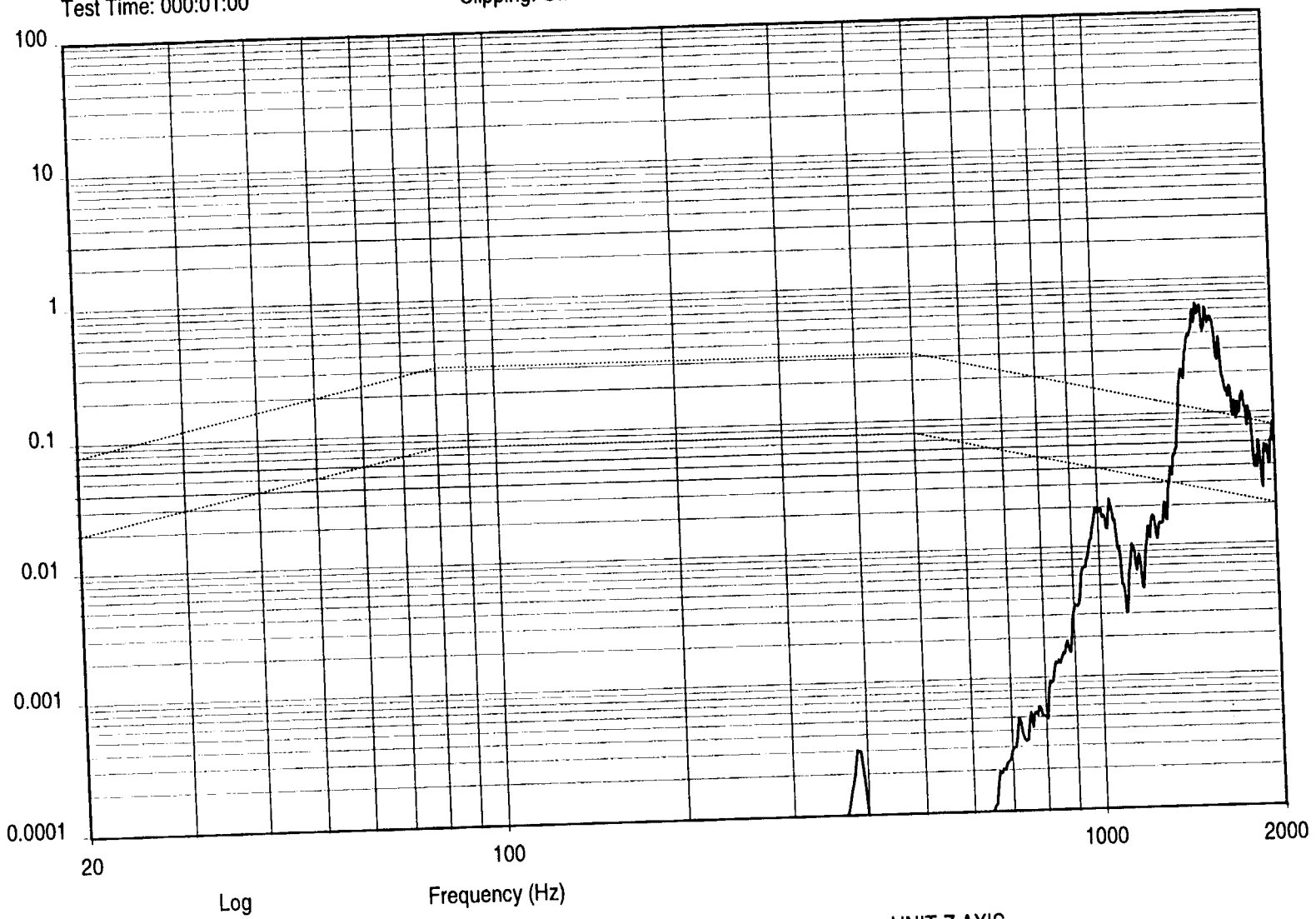
ENG 217
7A 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz

Auxiliary 2



Log
g²/Hz

DOF 120

RMS:
12.066 g

UNIT Z AXIS

11:45:49
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10

Test Name: PLO.tmp

10/26/98
EoI

ENG 217

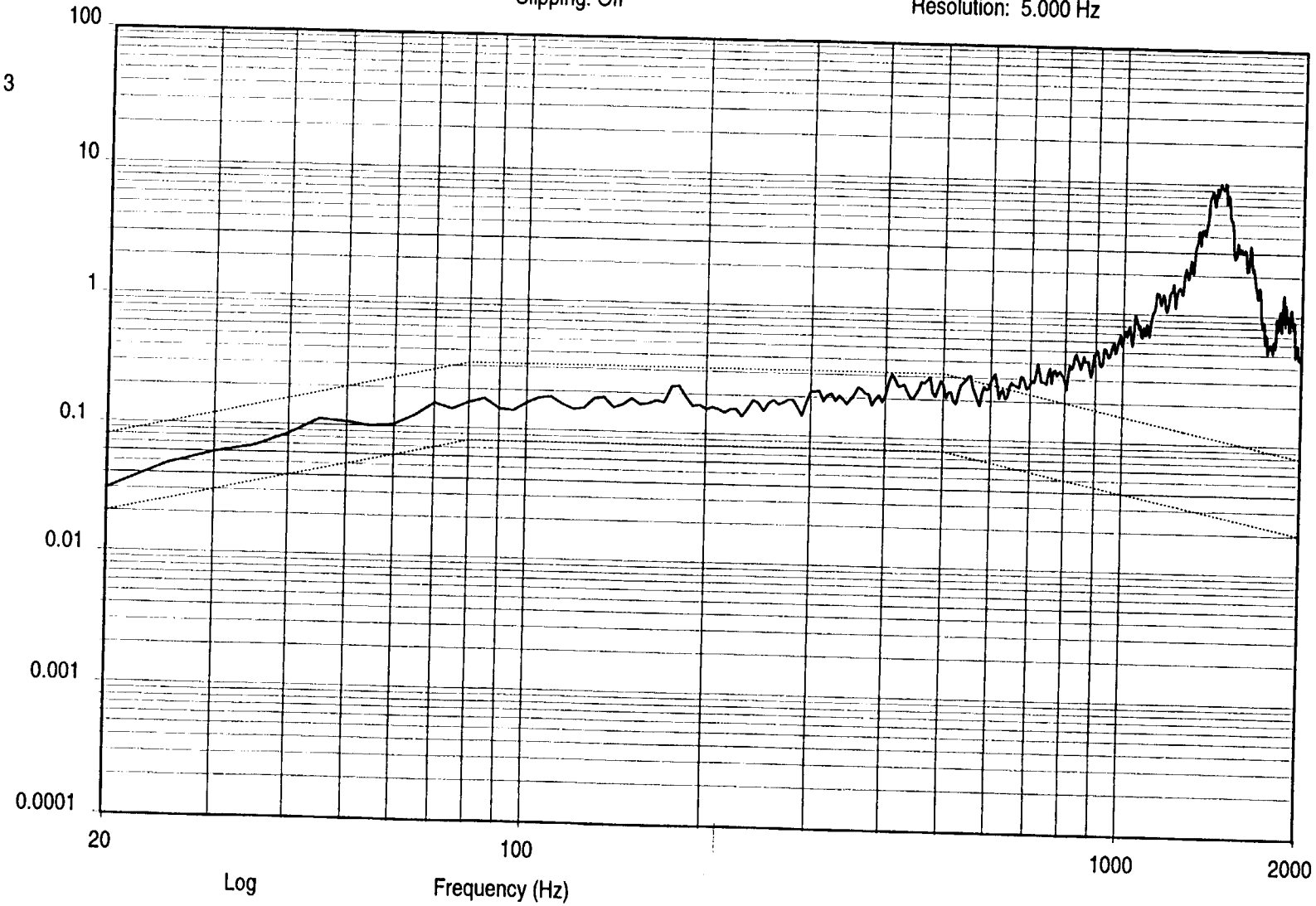
TA 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz

Auxiliary 3



Log
g²/Hz

DOF 120

RMS:
52.457 g

11:45:53
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

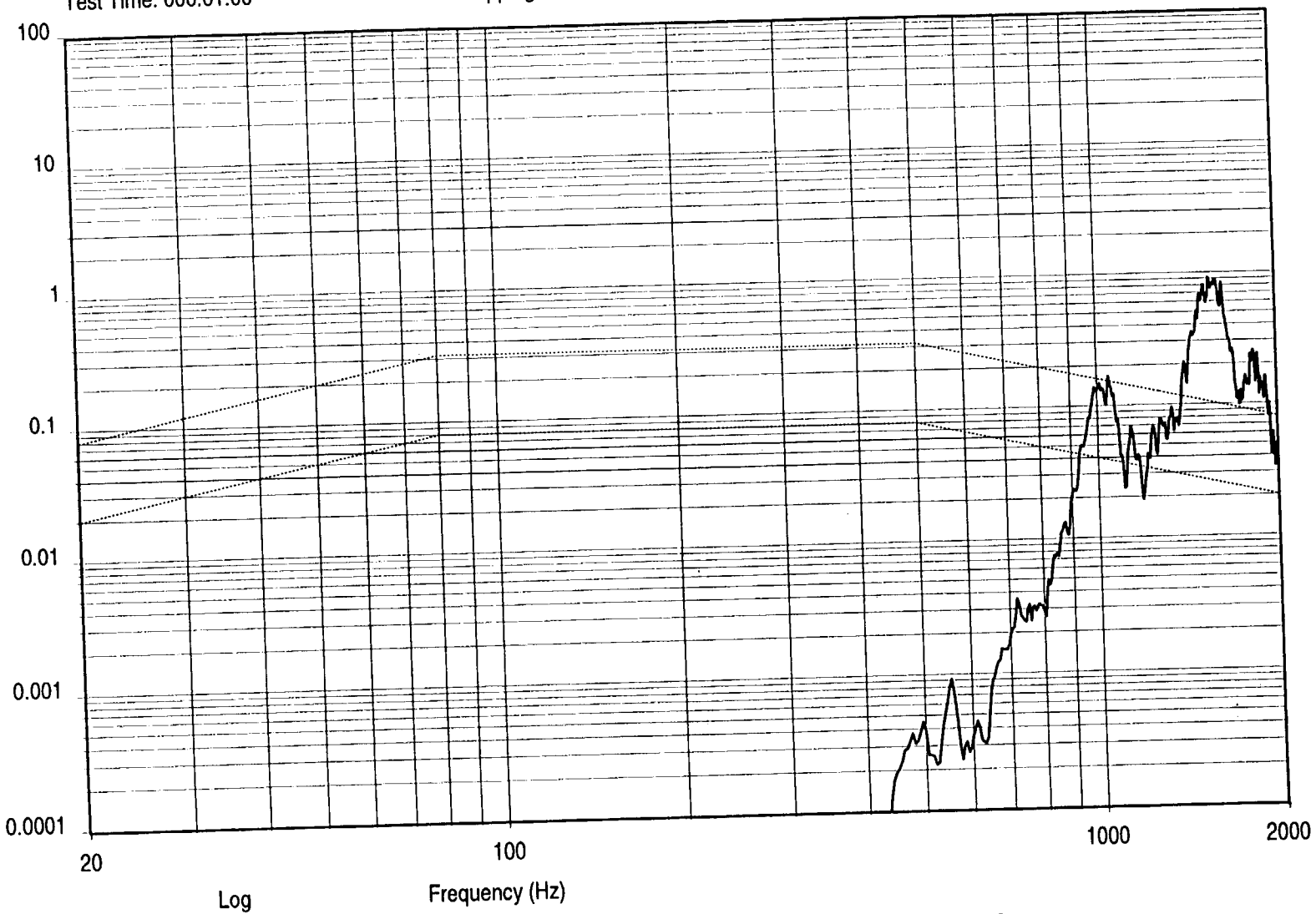
ENG 217
10/26/98
EOL
7A 287

UNIT Y AXIS

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

Log
g^2/Hz

DOF 120

RMS:
15.259 g

UNIT X AXIS

11:45:57
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10

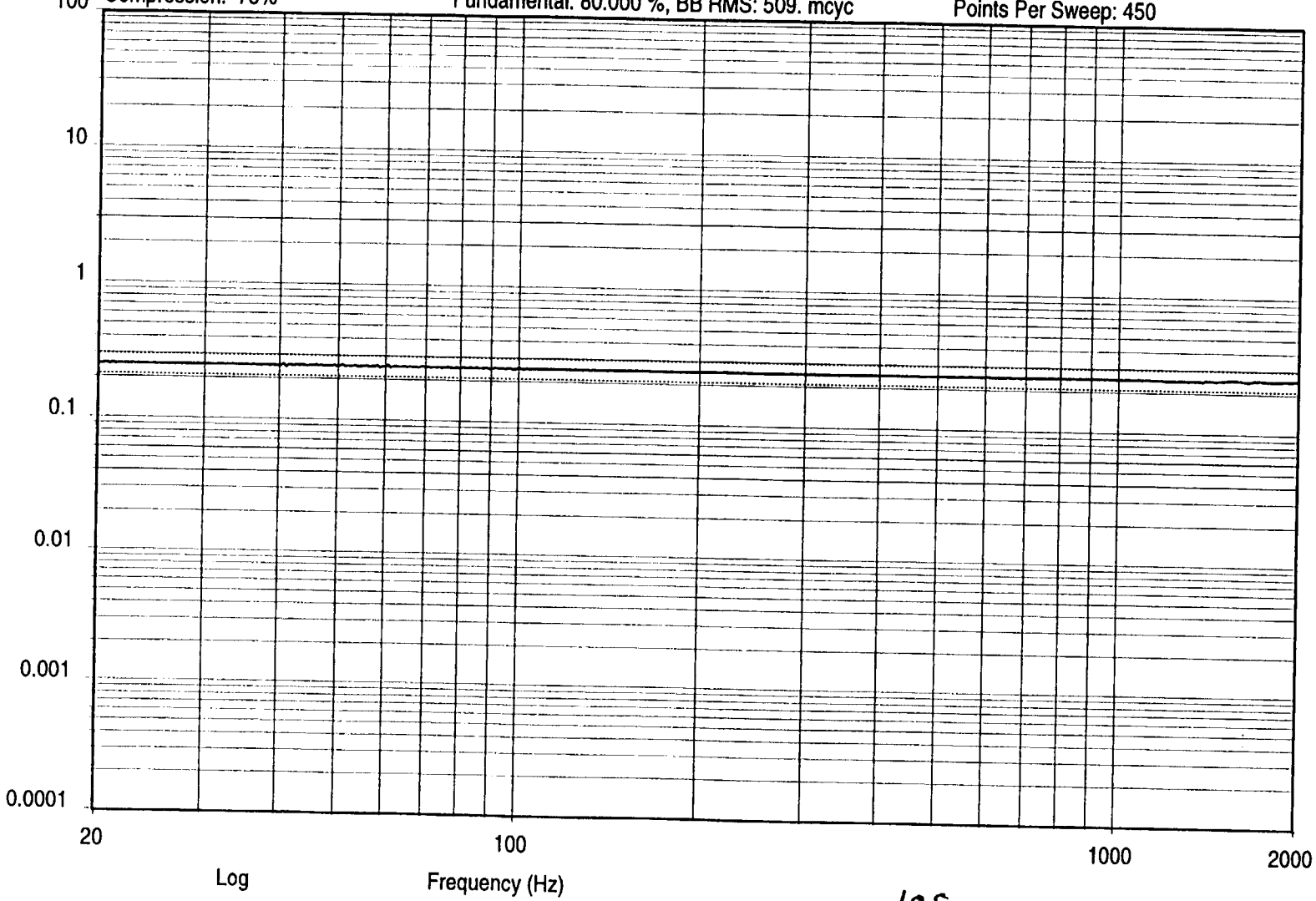
Test Name: PLO.tmp

10/26/98
ENG 217
EOT
7A 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

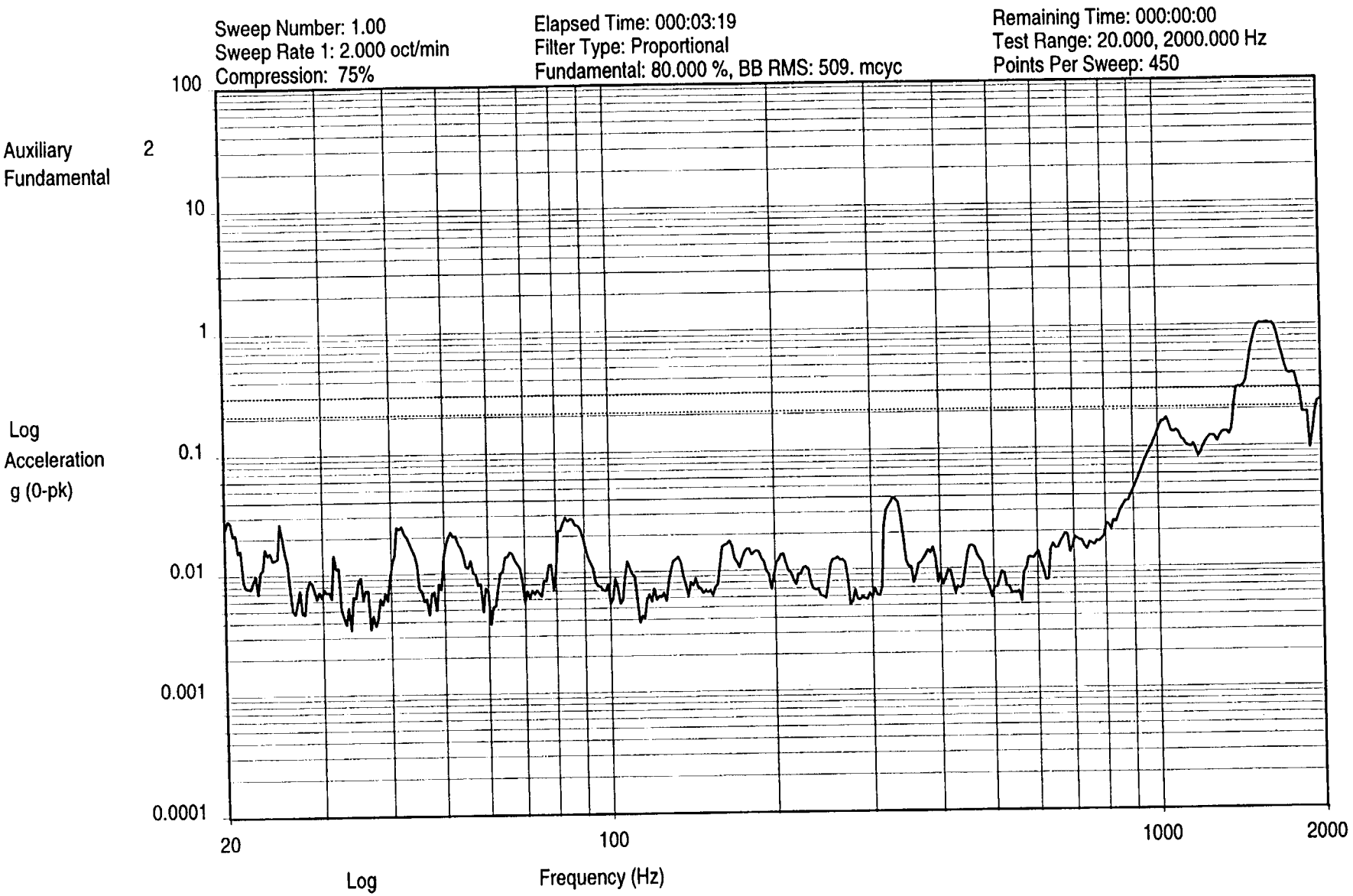
Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11:55:30
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
POST Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

10/26/98
ENG 217 EdI
TA 267



11:55:34
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
POST Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

10/26/98

ENG 217

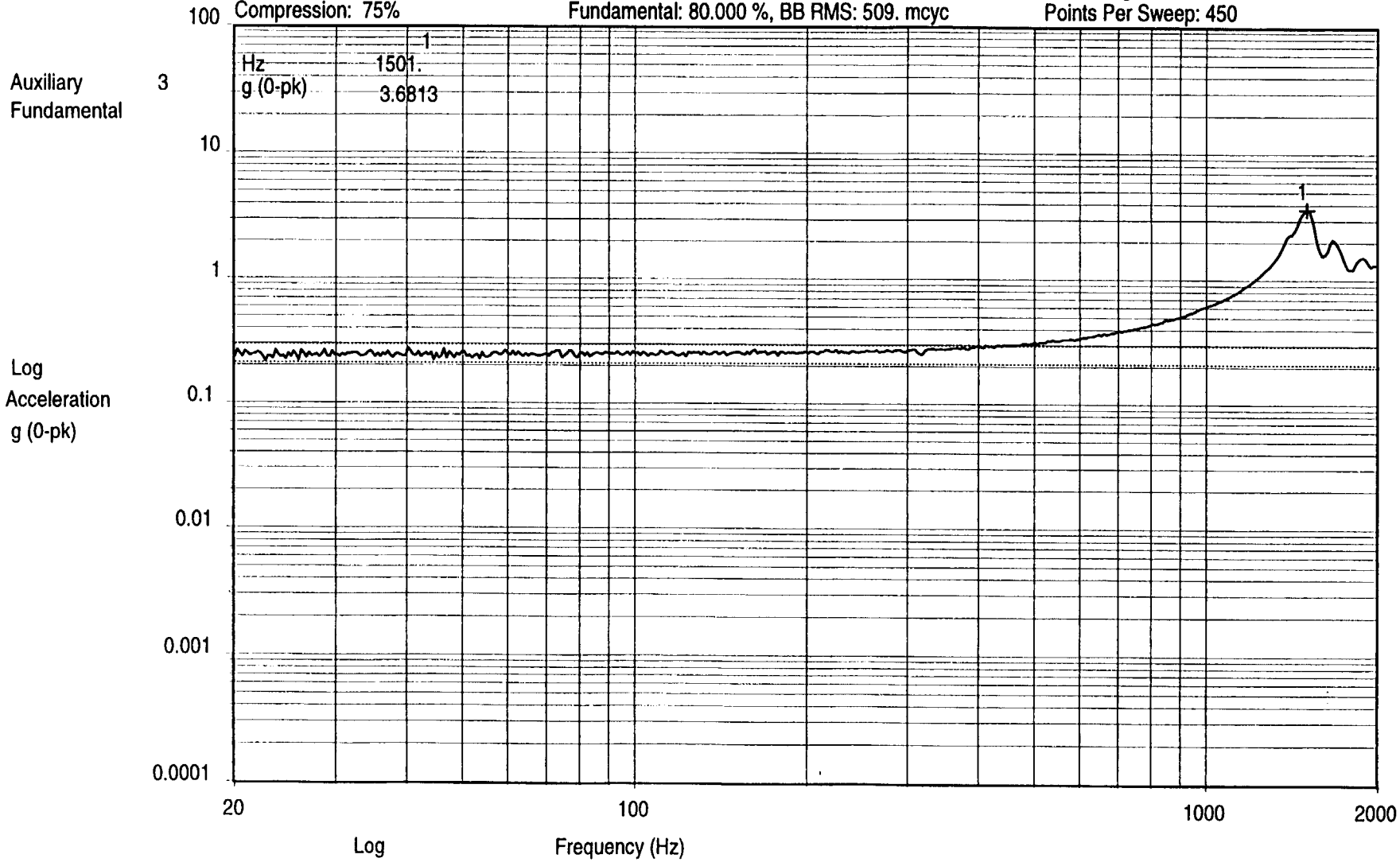
EOT 7A 267

UNIT Z

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11:57:50
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
POST Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

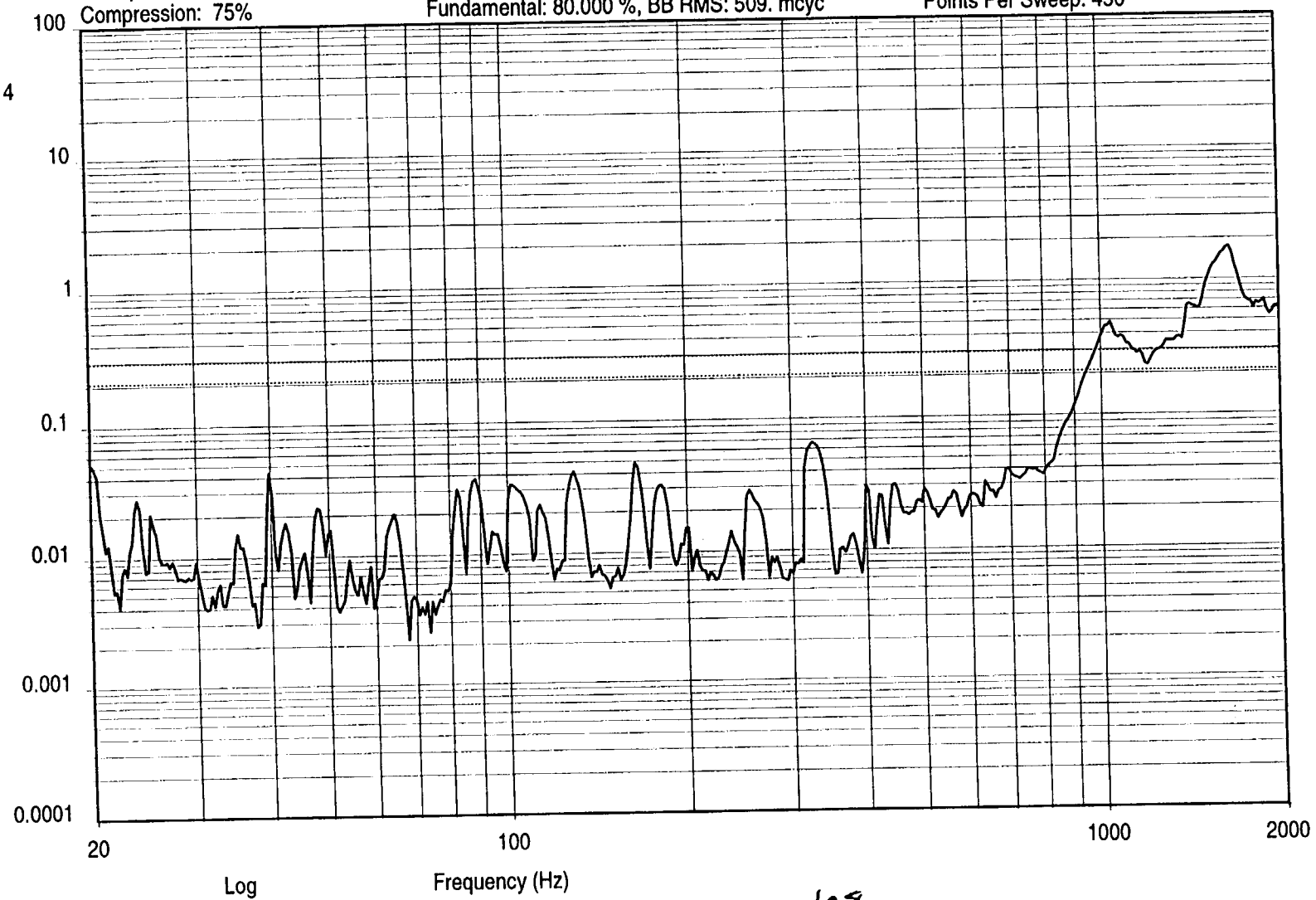
10/26/98
ENG 217
EOI
2A 267

UNIT Y

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11:55:42
26-Oct-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
POST Y AXIS SINE SWEEP TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

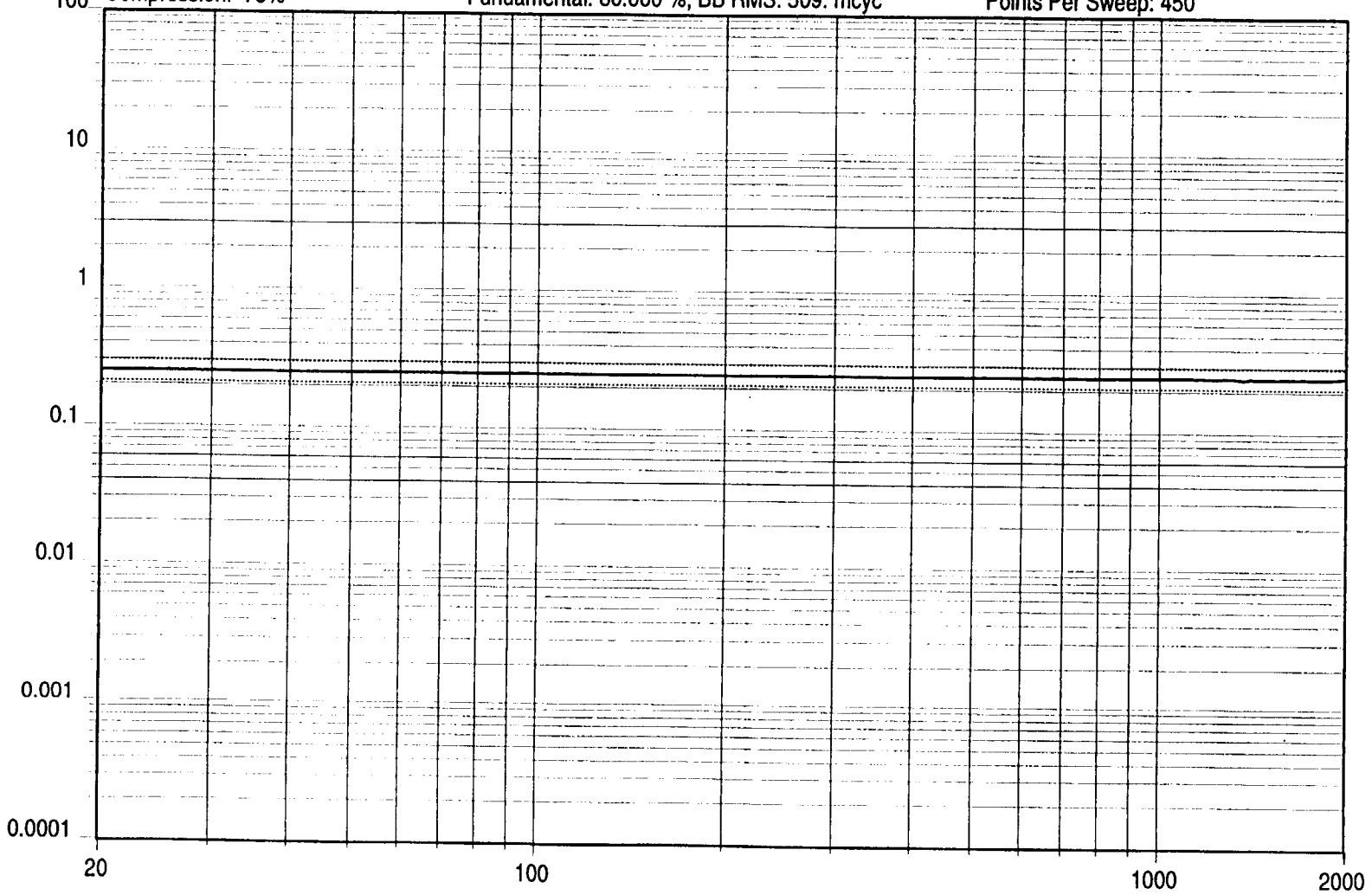
10/26/98
EAI
ENG 217
27

UNIT X

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

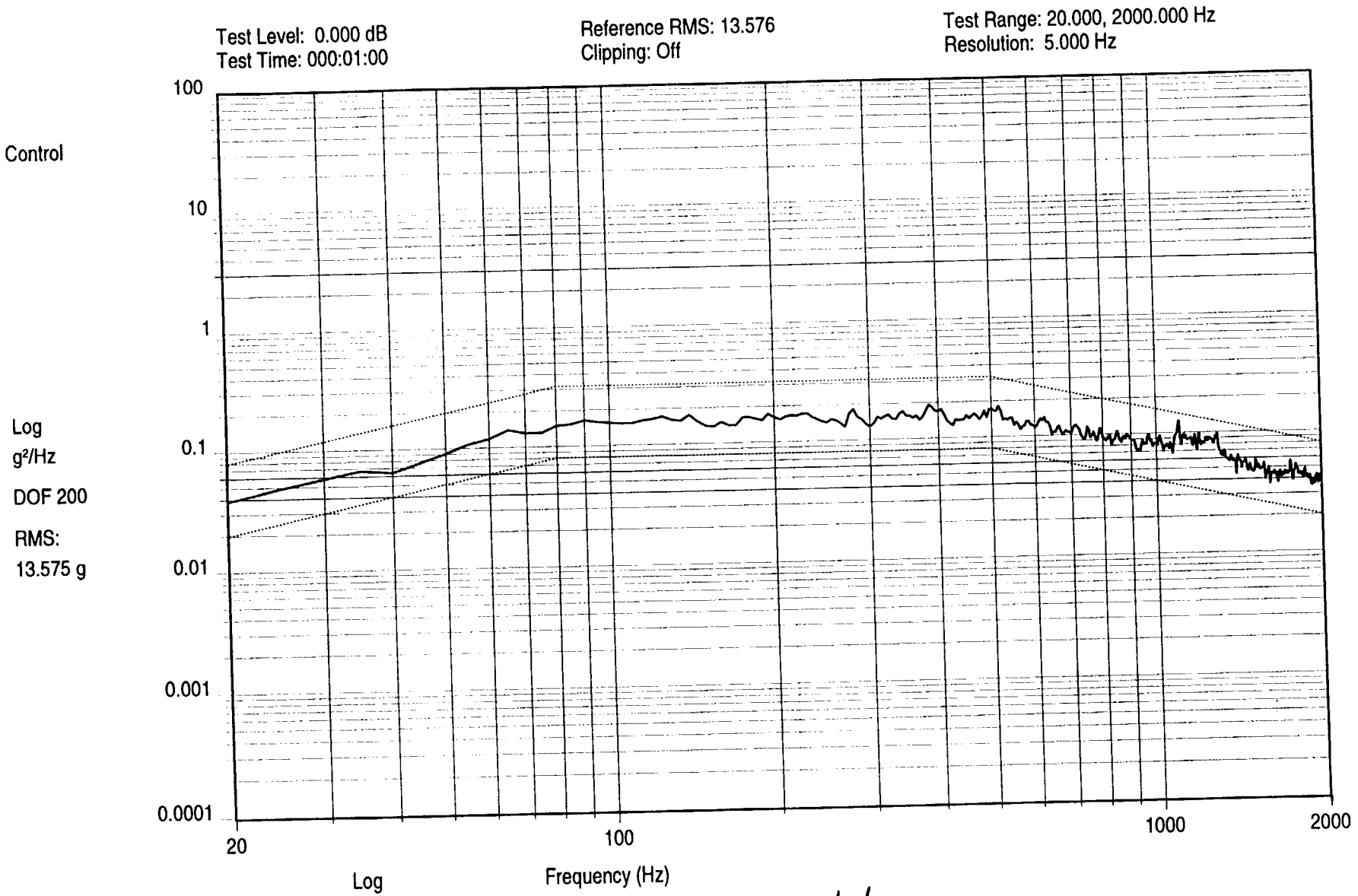
Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



10:47:55
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS SYSTEM CHECKOUT P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11/4/98
ENG 217
TA 267



10:56:02
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS SYSTEM CHECKOUT P/N 1348360-1 S/N ,F10

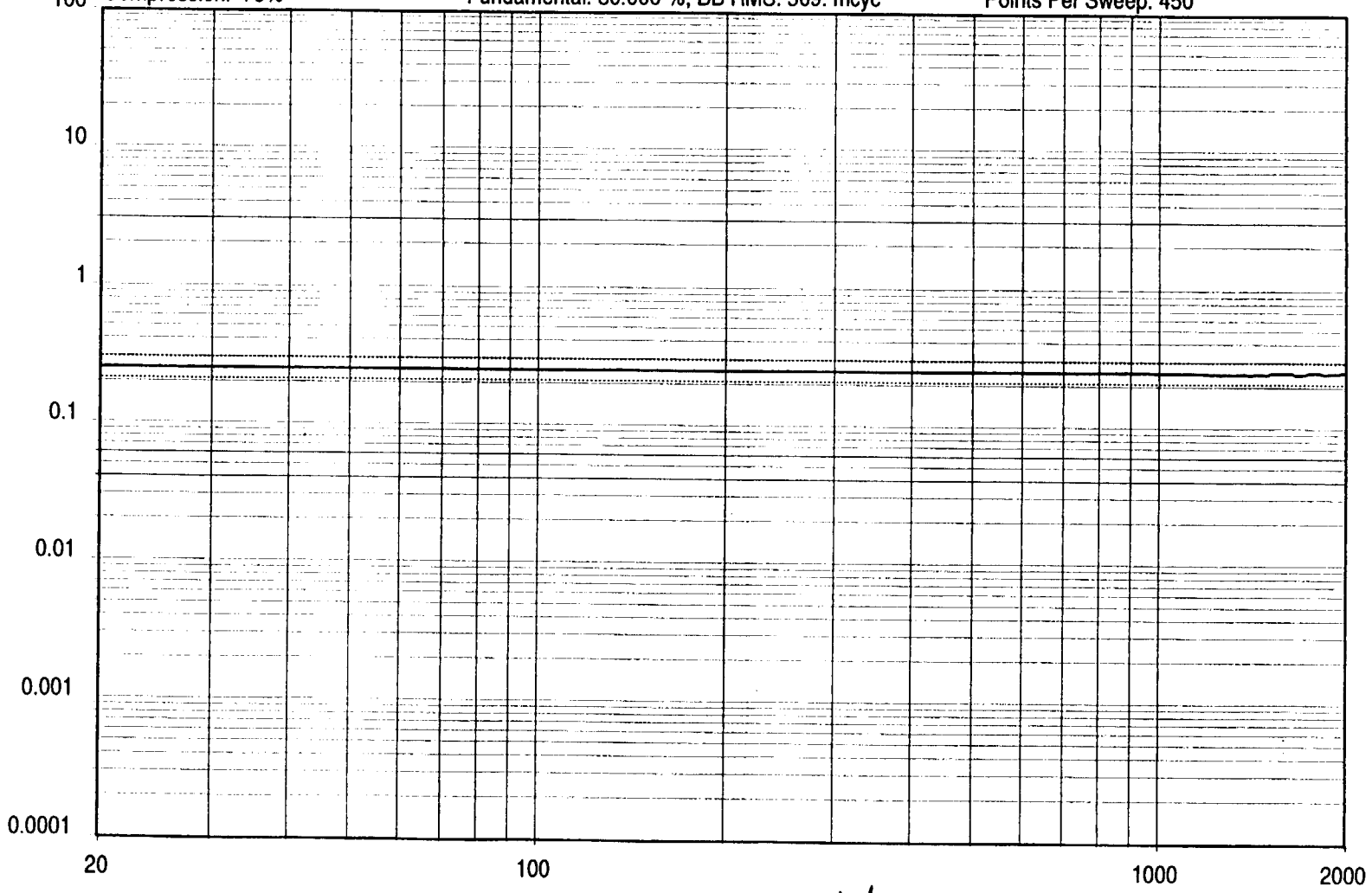
Test Name: PLO.tmp

11/4/98
ENG 217 7A 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



14:22:27
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

ENG 217

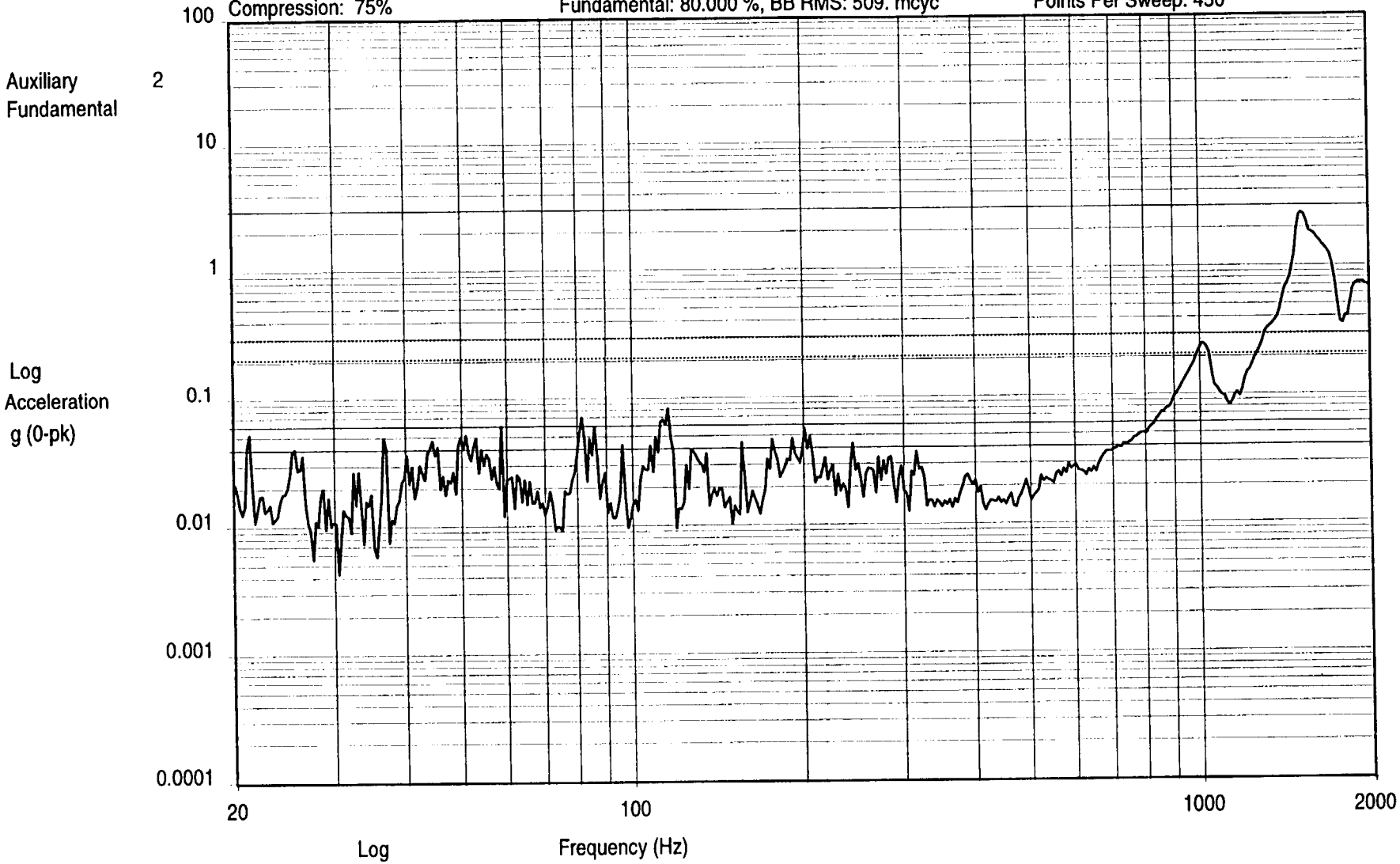
11/4/98

TA 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



UNIT Z

14:22:32
04-Nov-1998

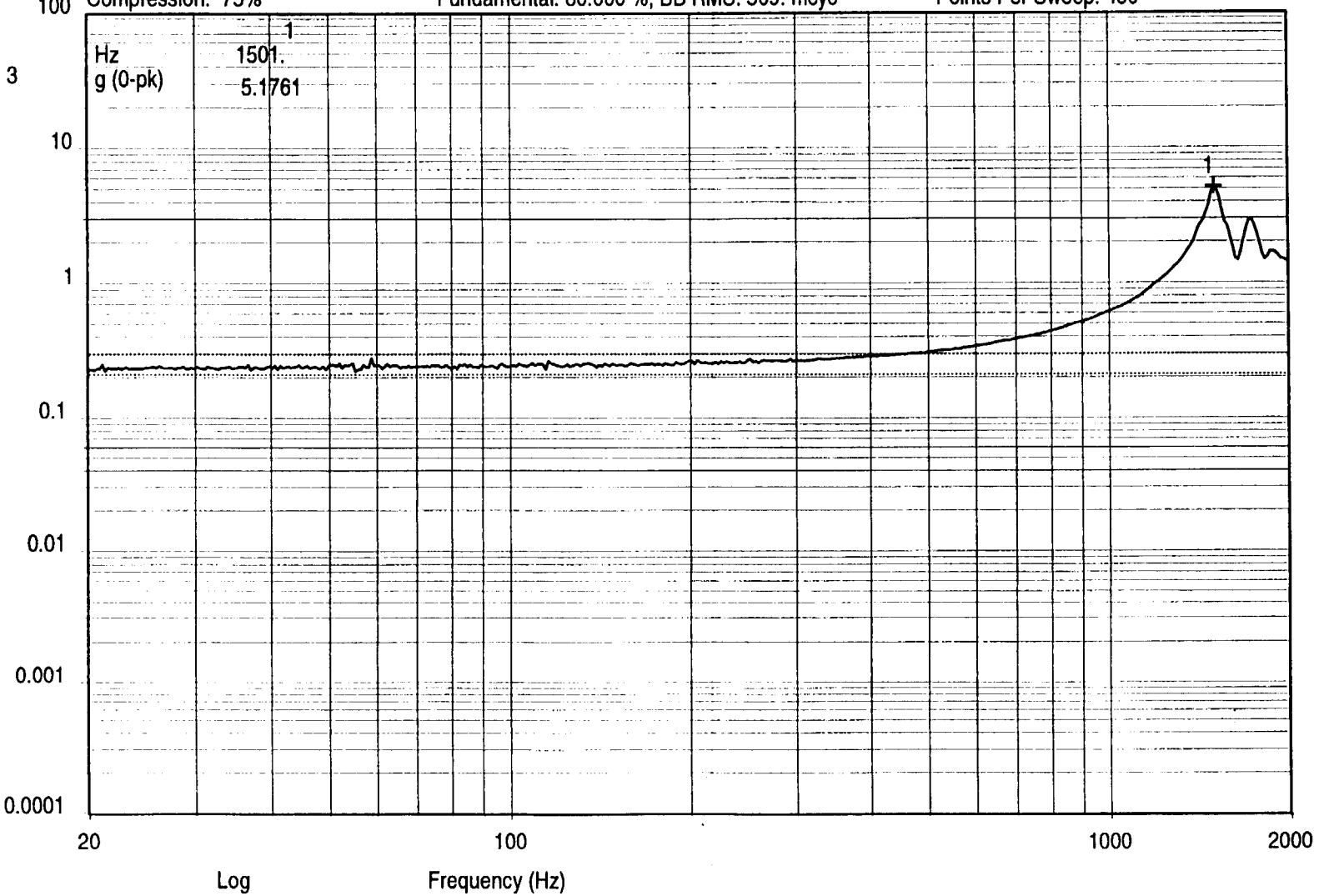
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217 11-4-98 IA 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



Auxiliary
Fundamental
3

Log
Acceleration
g (0-pk)

UNIT Y

14:22:41
04-Nov-1998

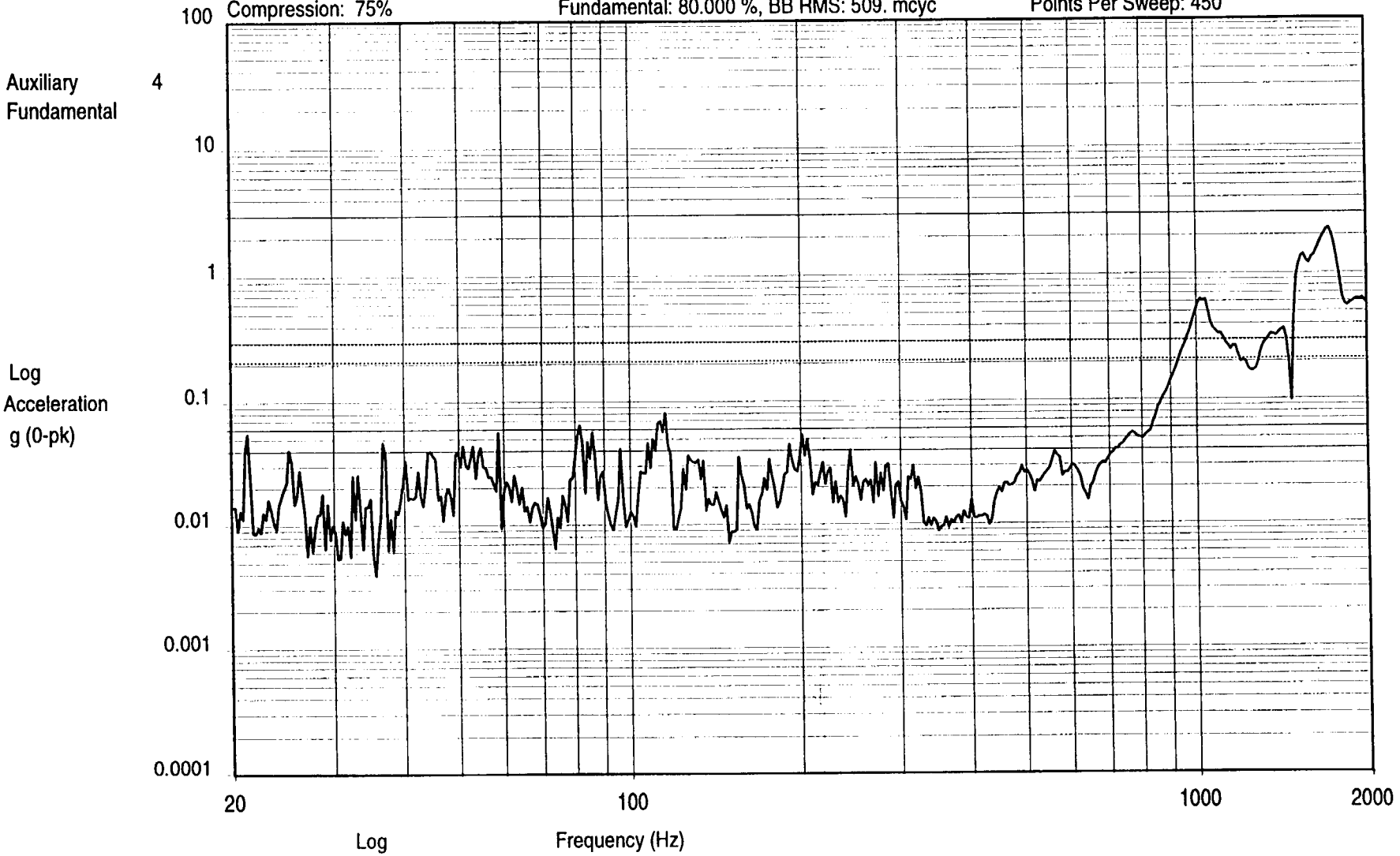
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



UNIT X

14:22:45
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217

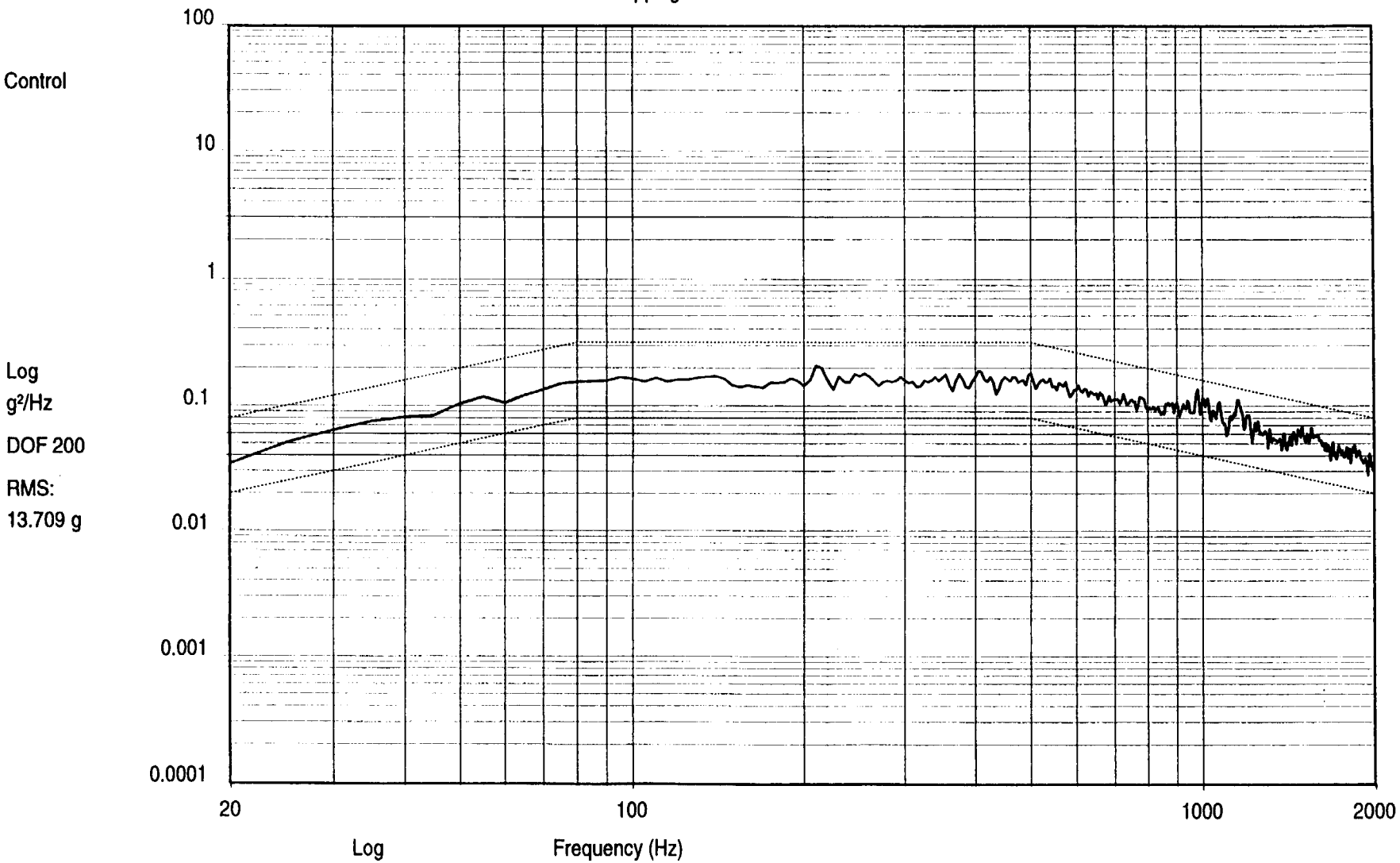
11-4-98

7A 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



14:41:59
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

11-4-98

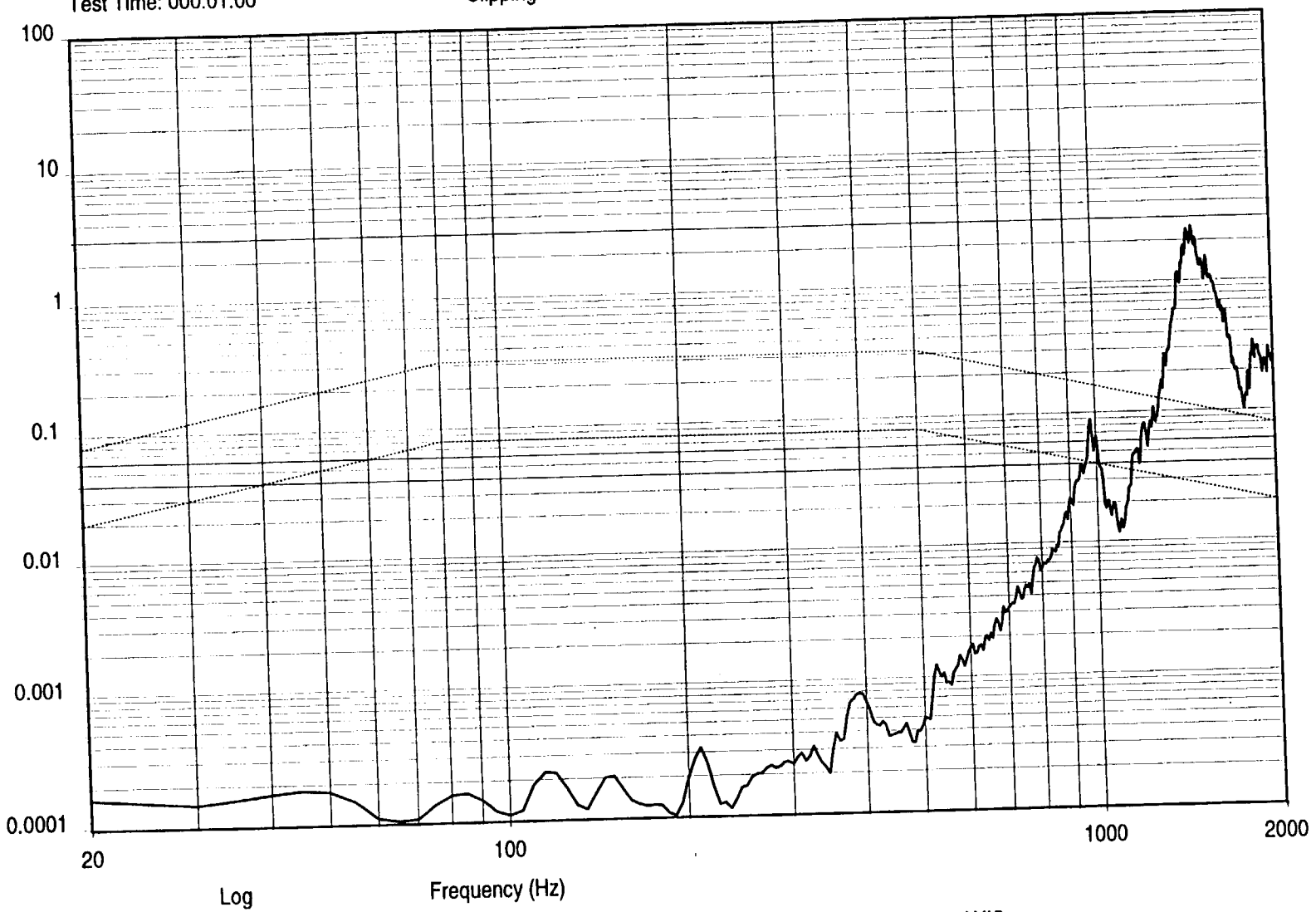
ENG 217

7A 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 2

Log
g²/Hz

DOF 120

RMS:
22.412 g

UNIT Z AXIS

14:42:04
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10

Test Name: PLO.tmp

11-4-98

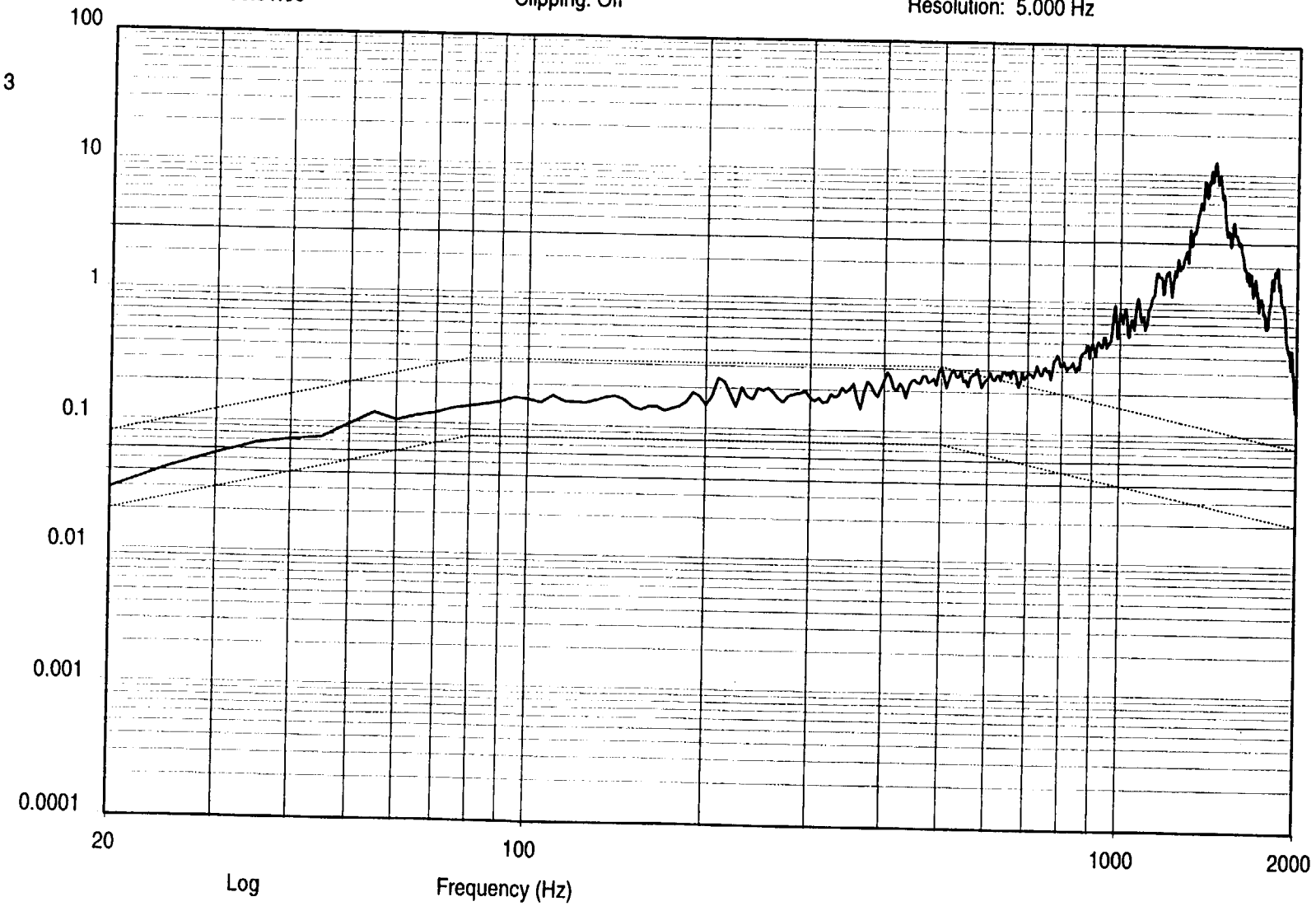
ENG 217

7A 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



14:42:08
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

UNIT Y AXIS

11-4-98

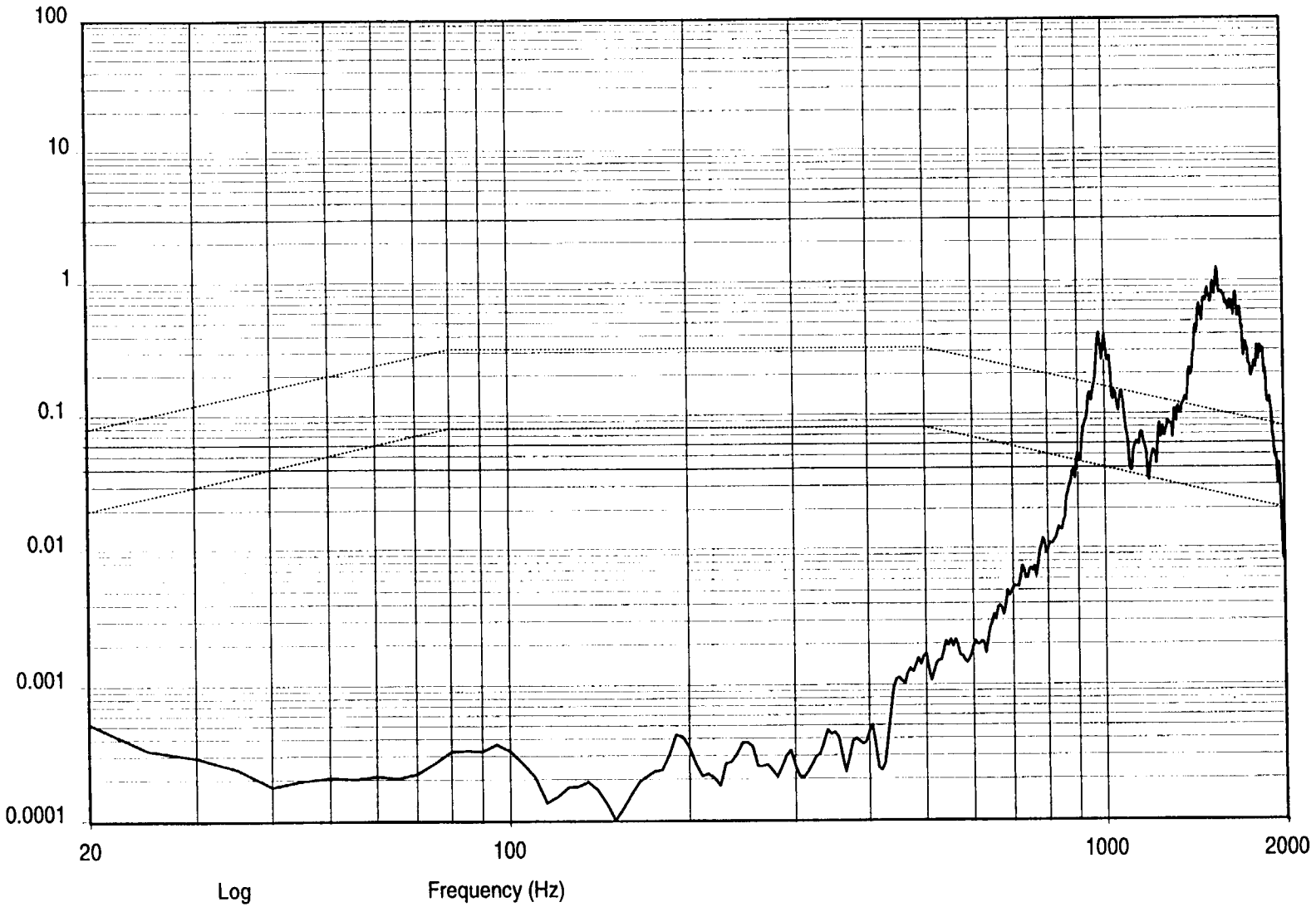
ENG 217

IPS 267

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

Log
g^2/Hz

DOF 120

RMS:
17.974 g

UNIT X AXIS

14:42:12
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Y AXIS TEST P/N 1348360-1 S/N ,F10

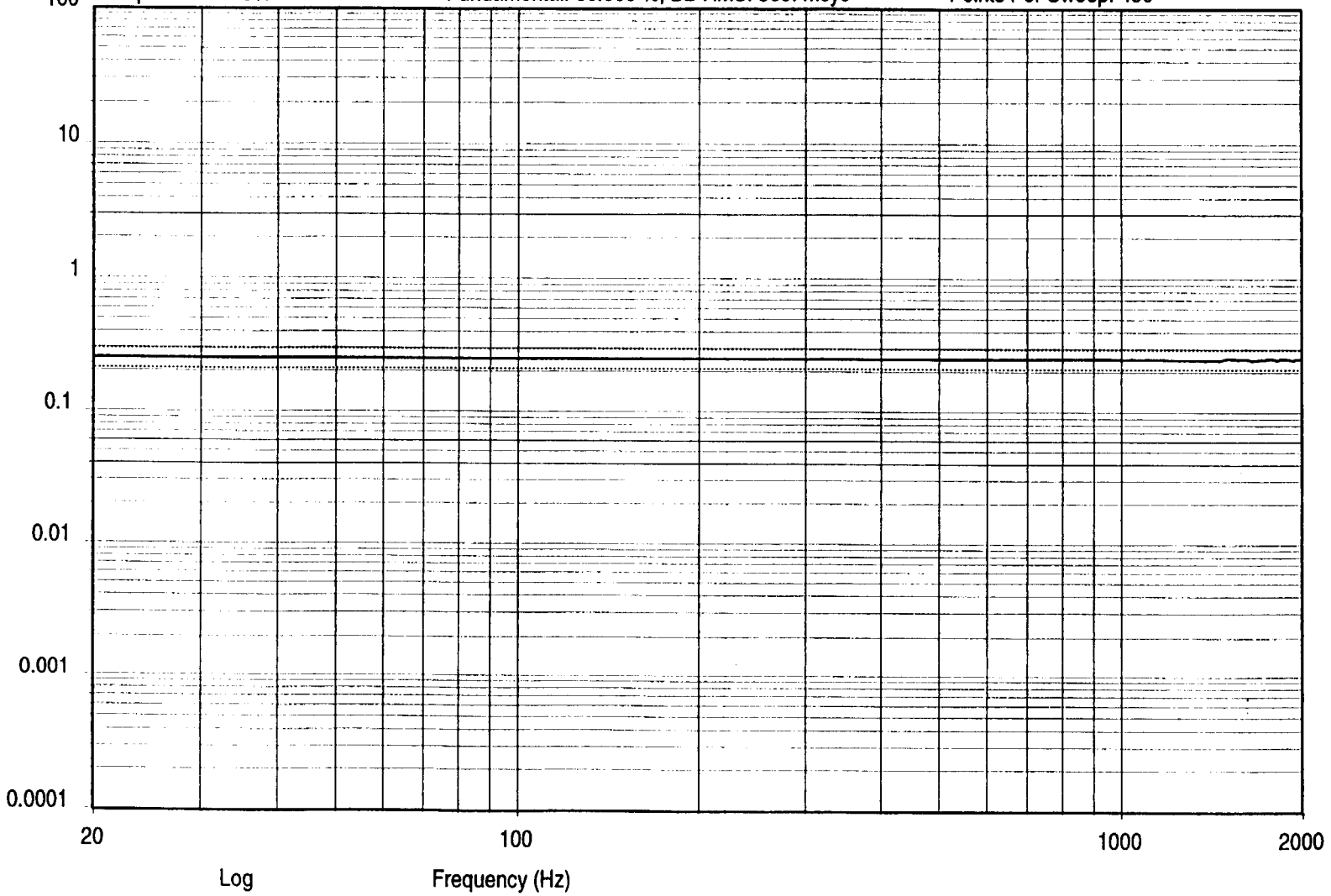
Test Name: PLO.tmp

ENG 217 11-4-98 TA 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



14:55:56
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

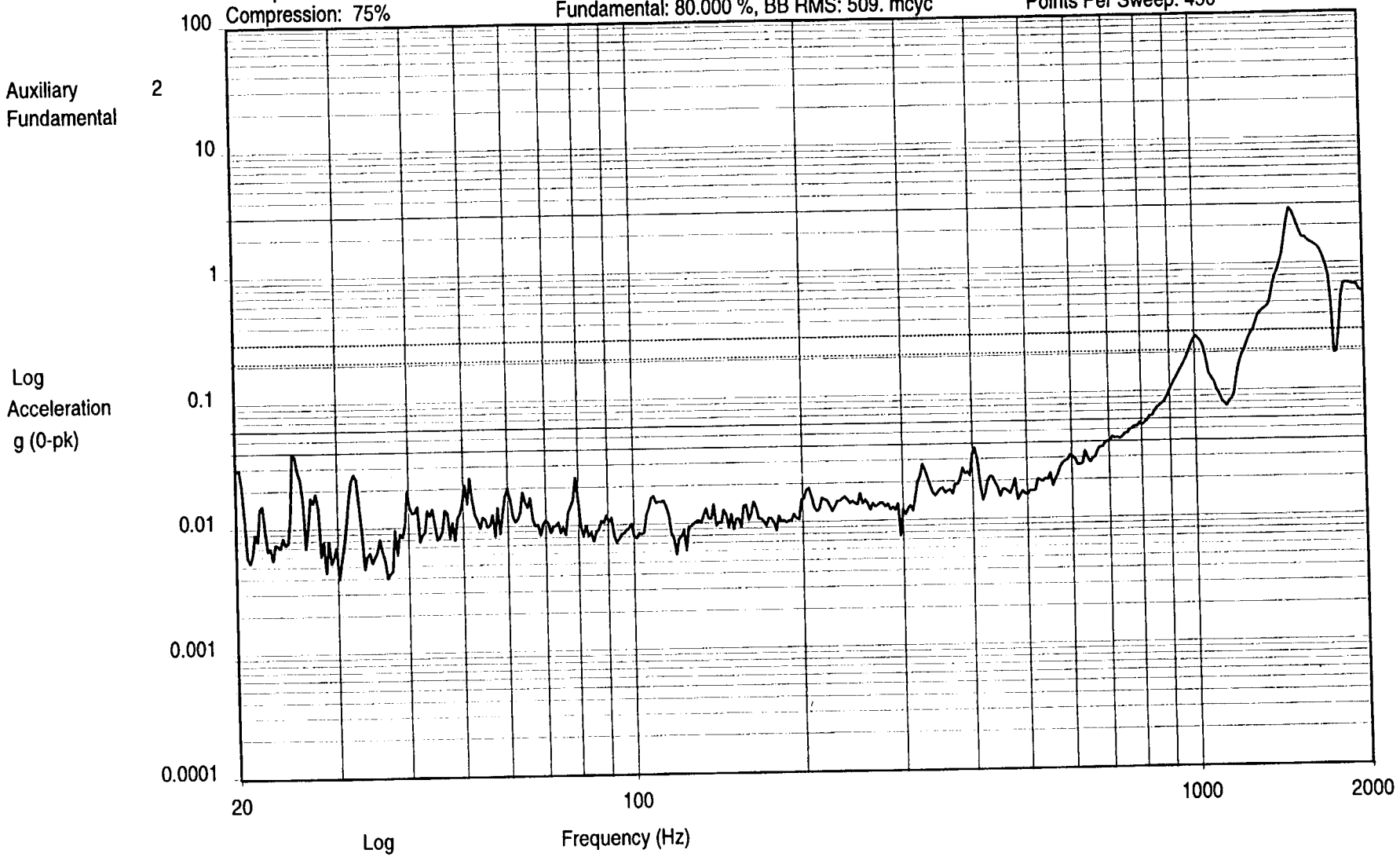
ENG 217

1A 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



UNIT Z

14:56:02
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS POST SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

11-4-98

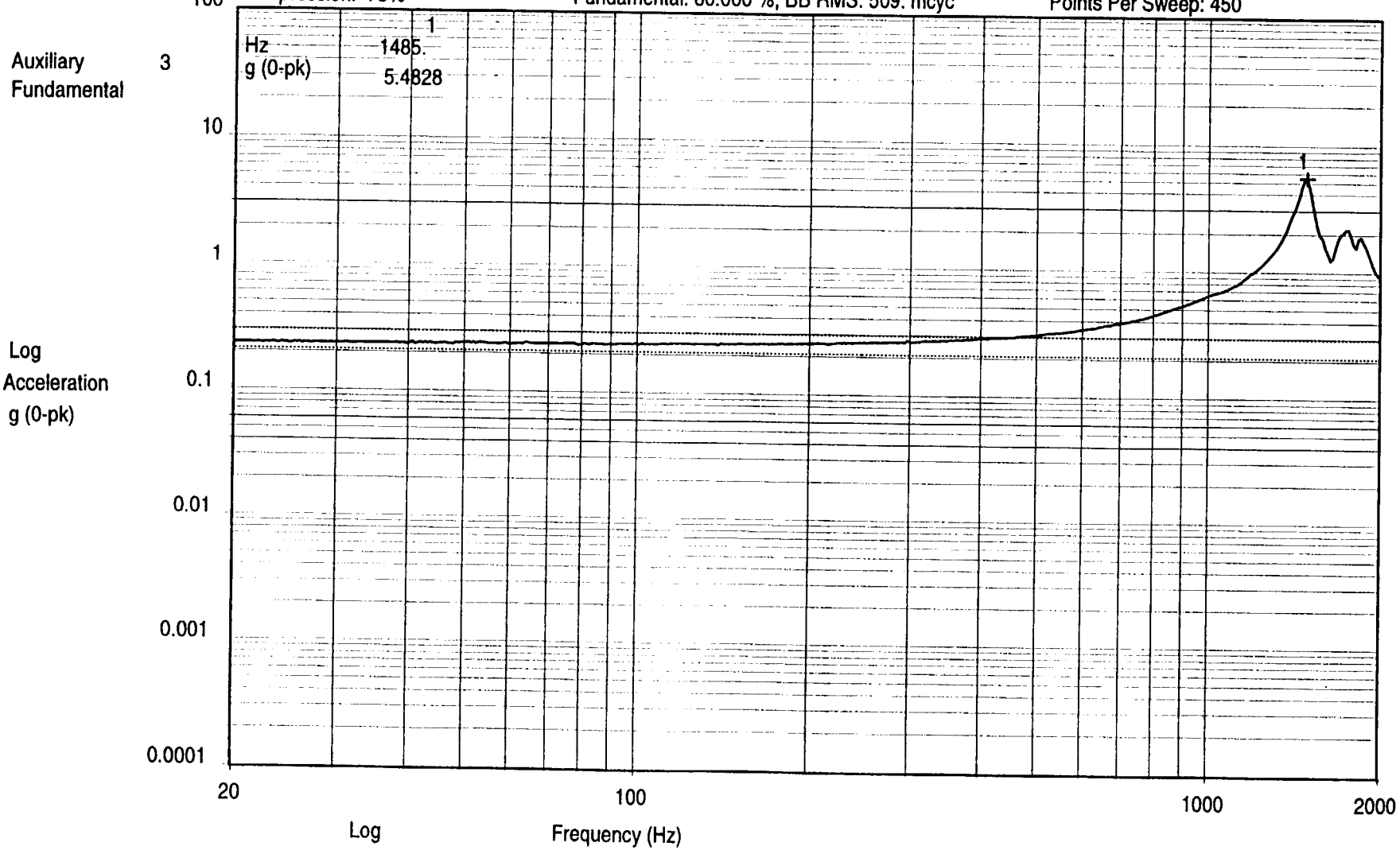
ENG 217

IA 267

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



14:56:17
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

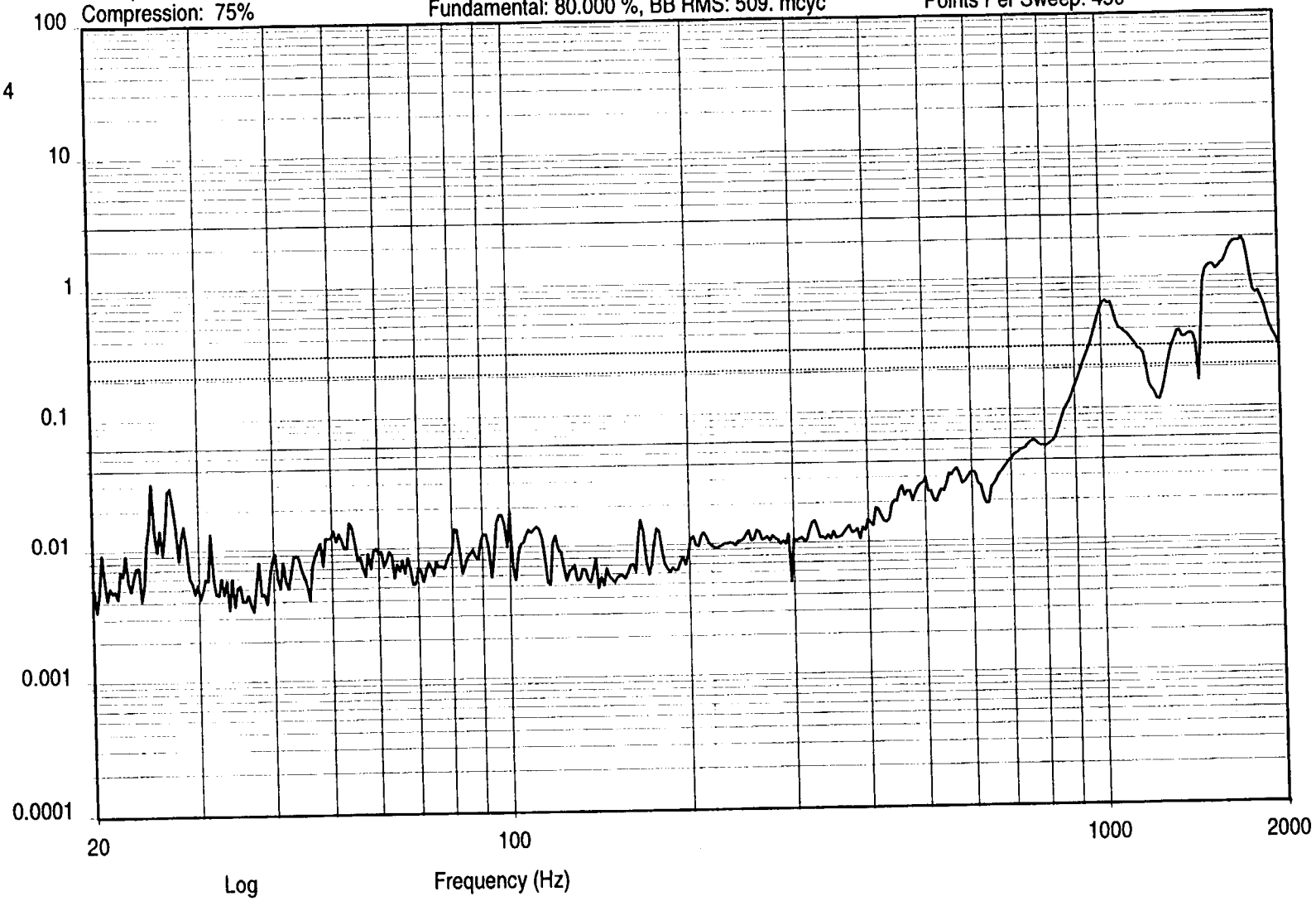
11-4-98
ENG 217
1A 267

UNIT Y

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



14:56:21
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Y AXIS POST SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

11-4-98

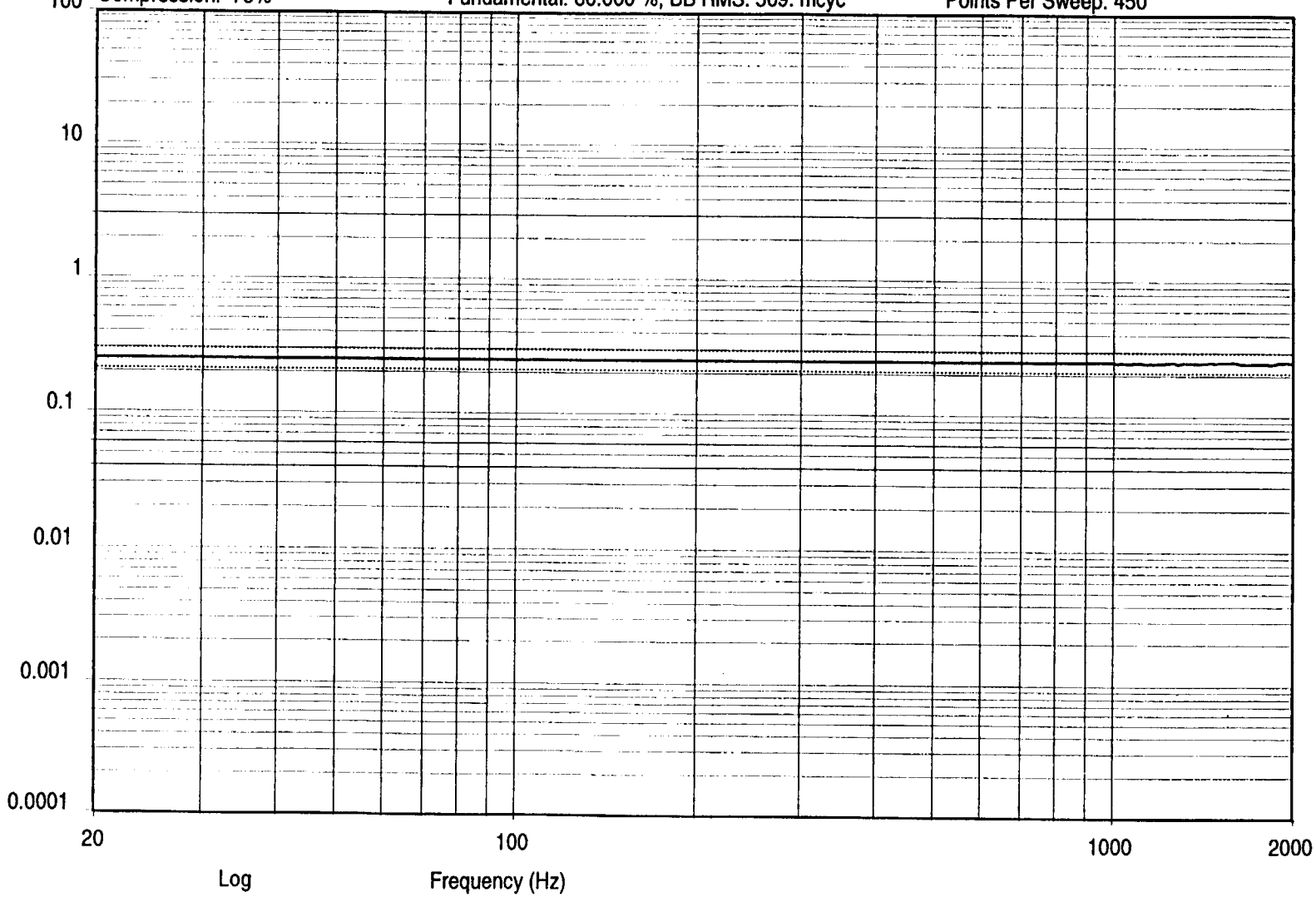
ENG 217

UNIT X

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



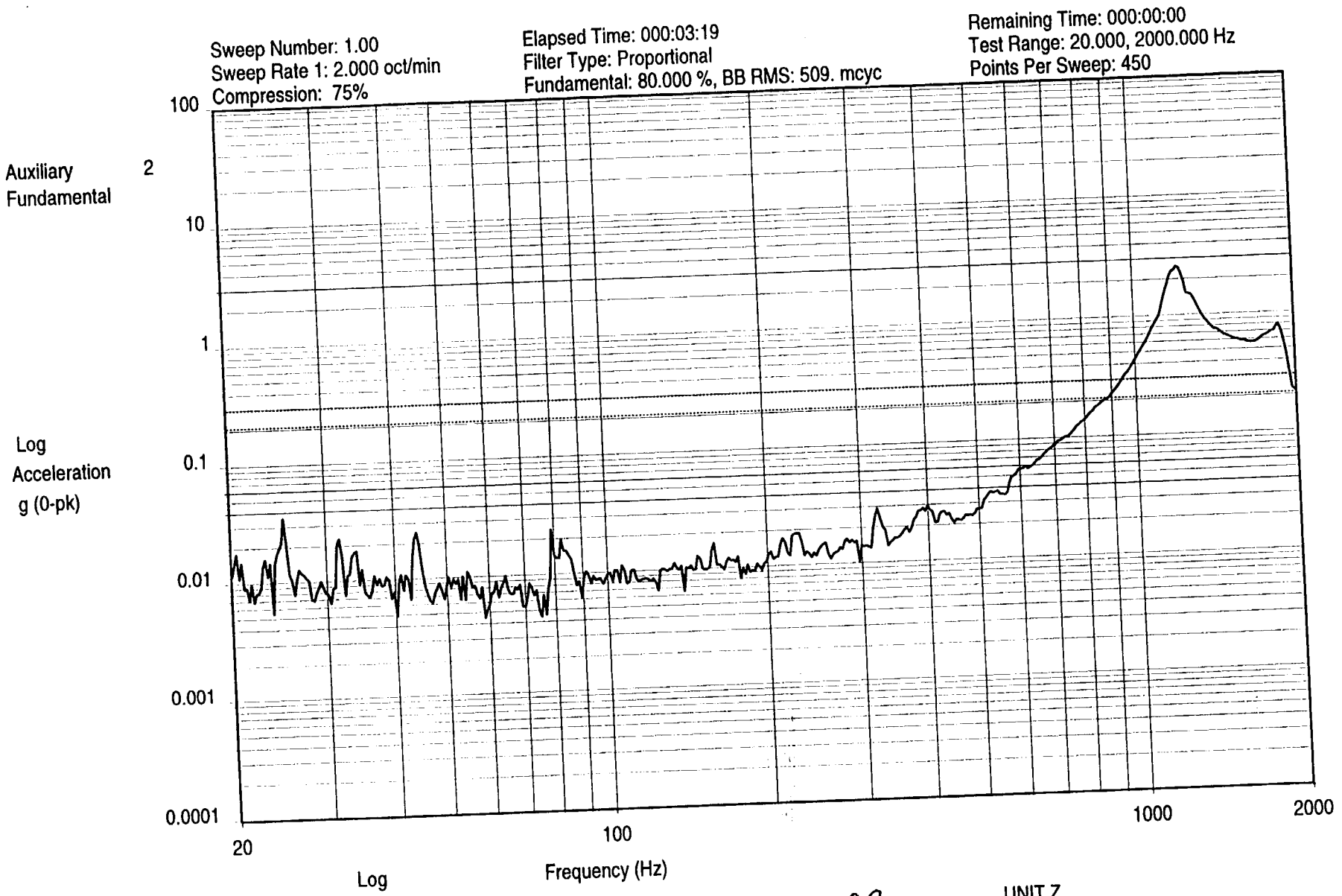
15:37:11
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

ENG 217

7A 267



UNIT Z

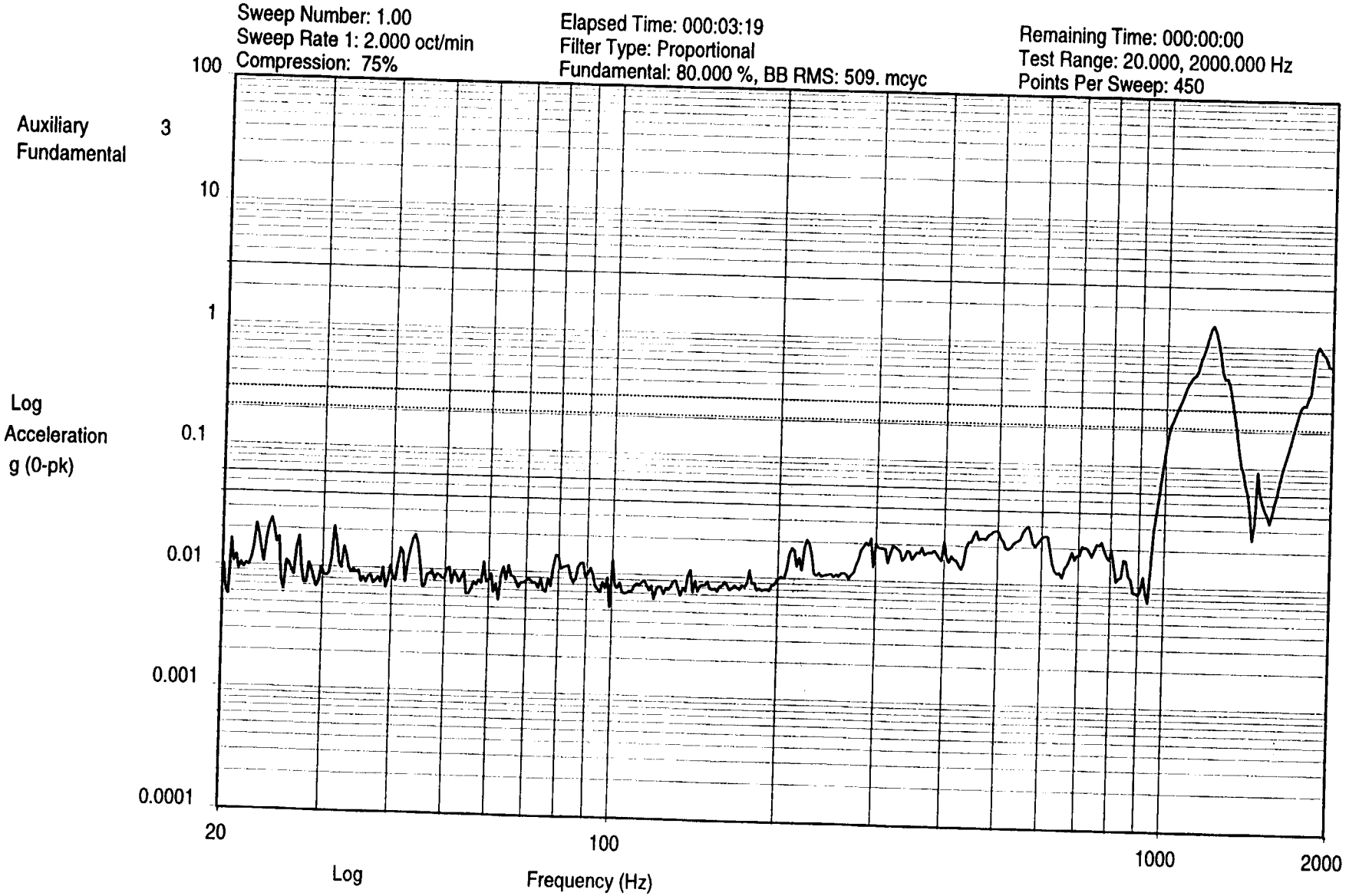
15:37:15
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

11-4-98

ENG 217 7A 267



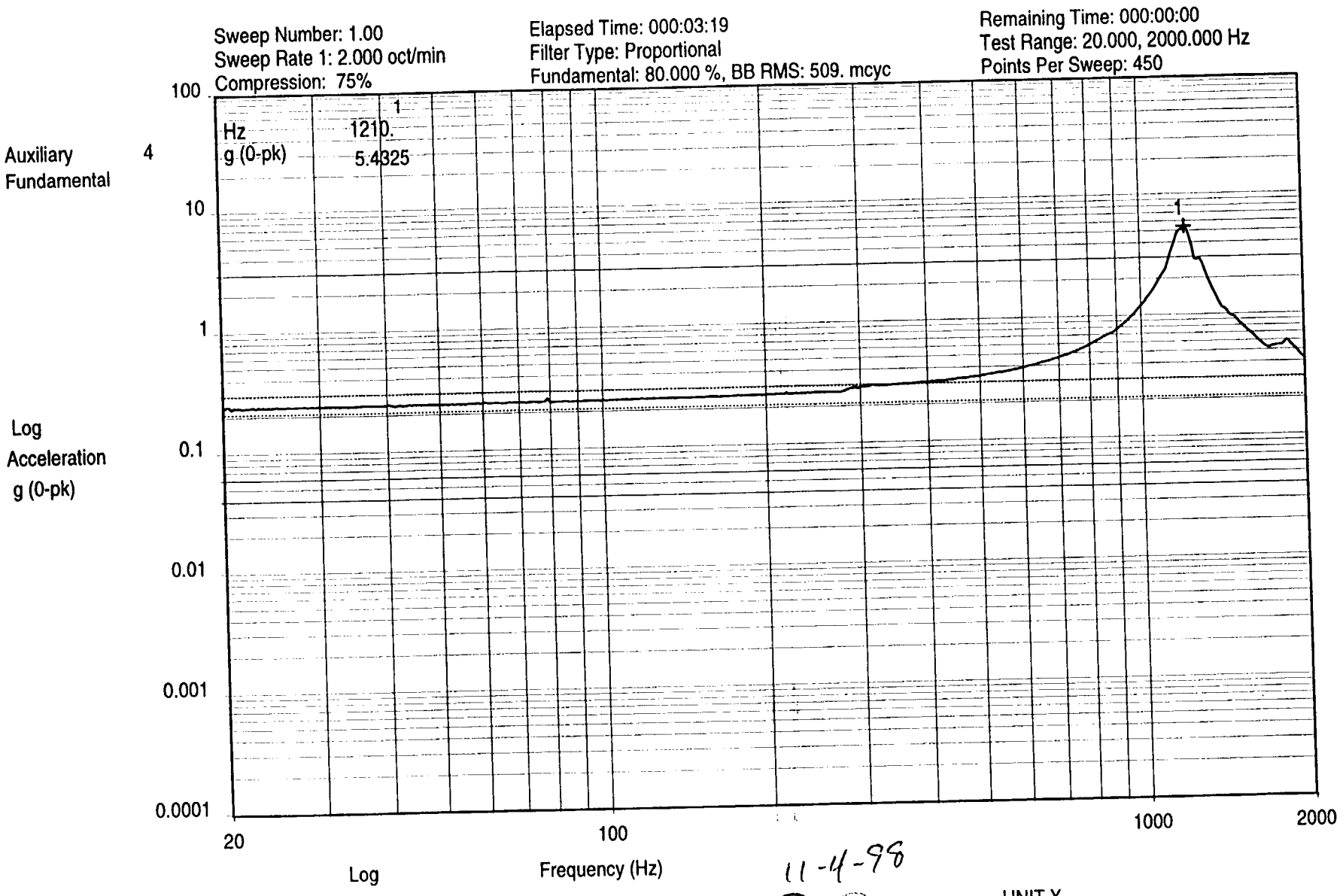
15:37:19
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

ENG 217 7A 267

UNIT Y



11-4-98

ENG 217

15:37:36
04-Nov-1998

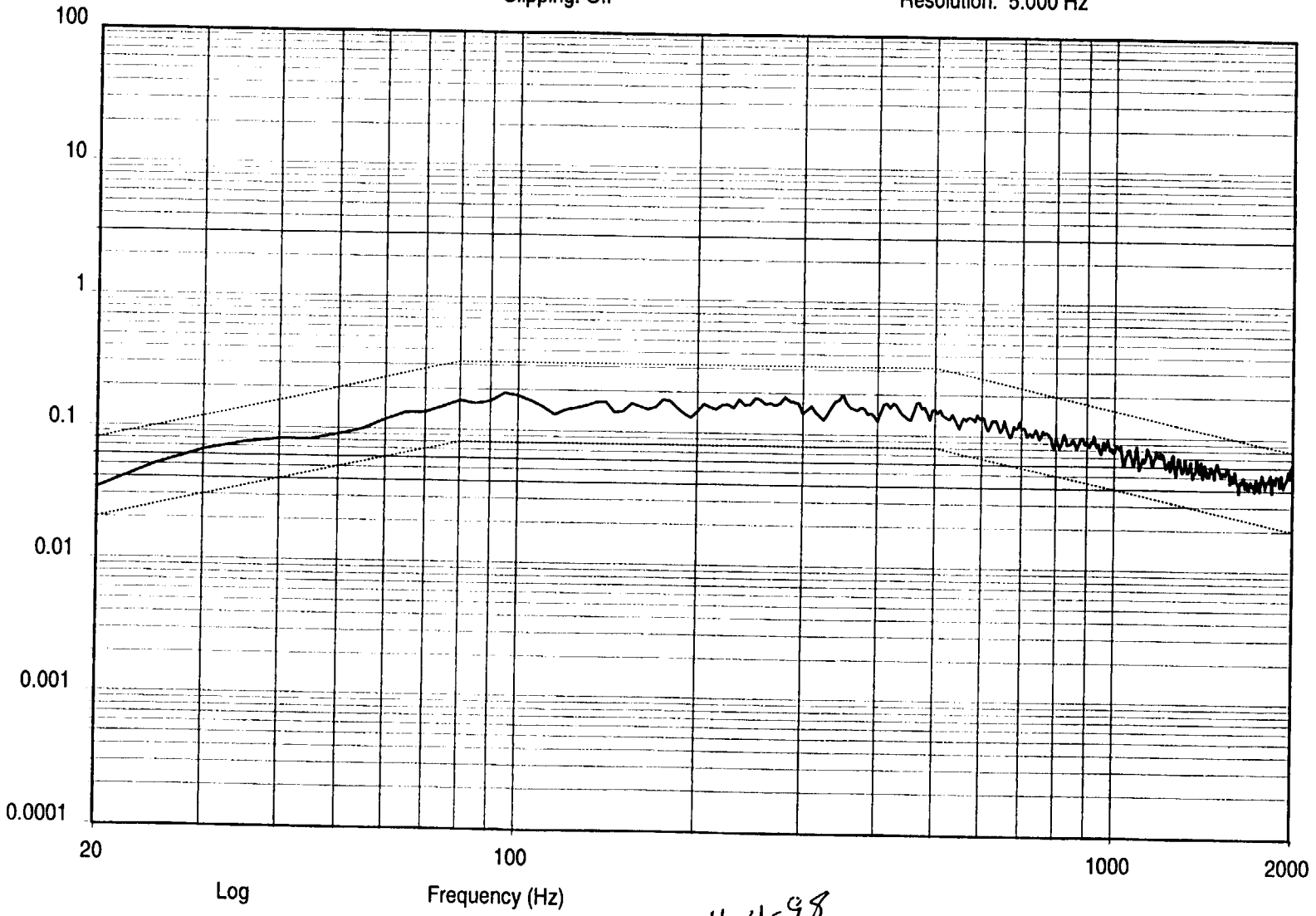
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Control

Log
g²/Hz

DOF 200

RMS:
13.553 g

15:51:48
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
X AXIS TEST P/N 1348360-1 S/N ,F10

Test Name: PLO.tmp

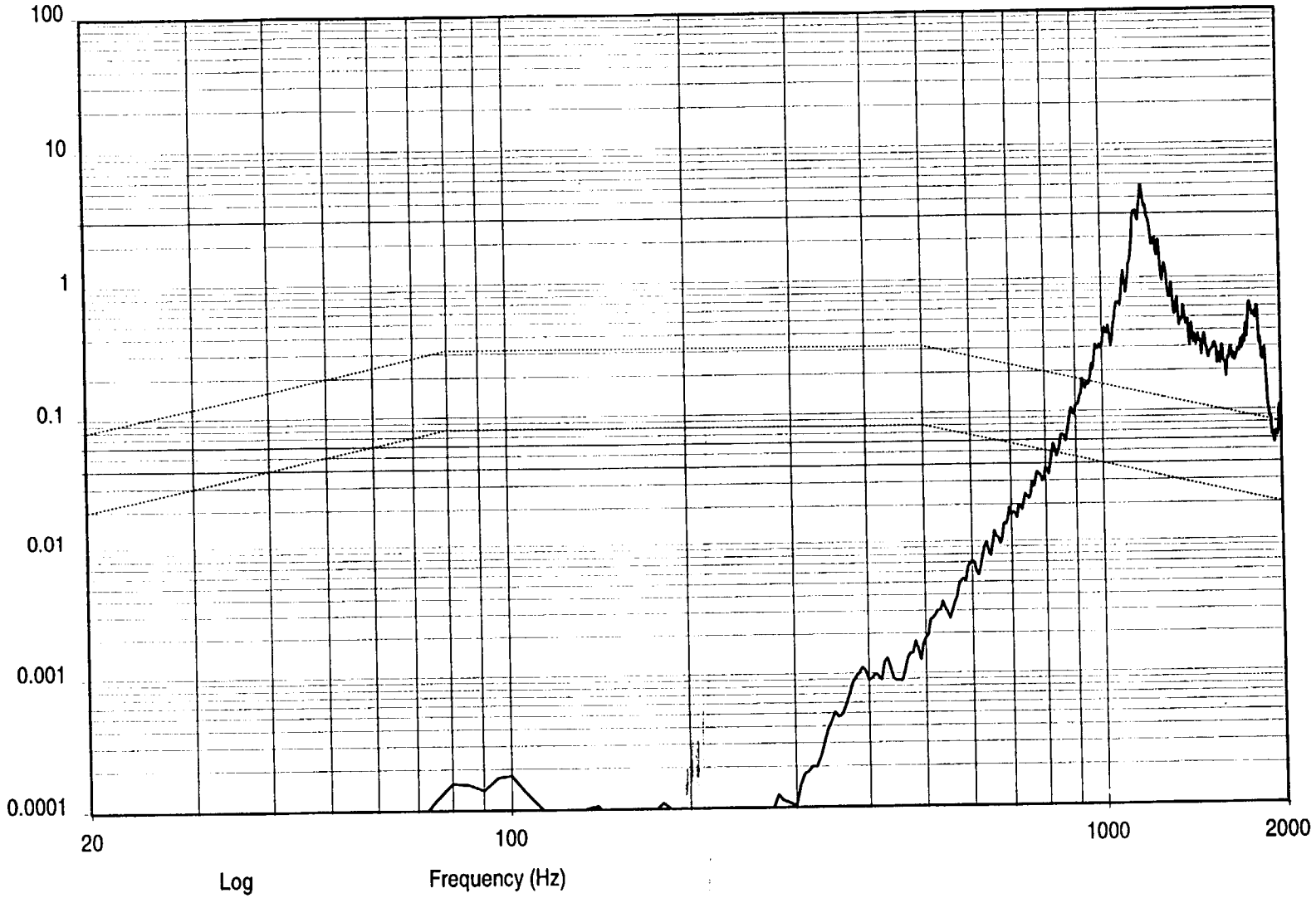
11-4-98

ENG 217 197

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 2

Log
g²/Hz

DOF 120

RMS:
27.488 g

15:51:55
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
X AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

11-4-98

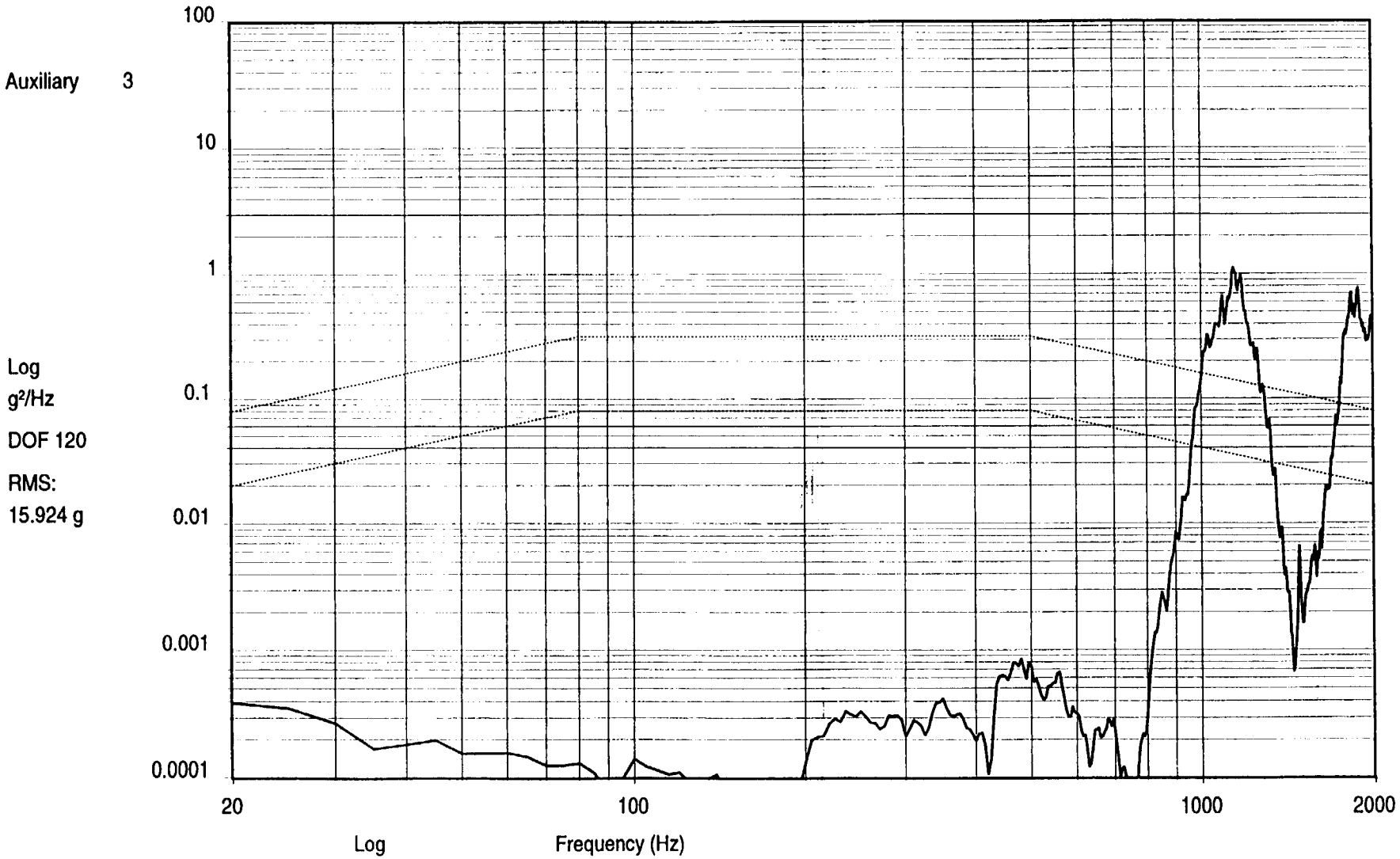
ENG 217 74 197

UNIT Z AXIS

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



15:51:59
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
X AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

11-4-98

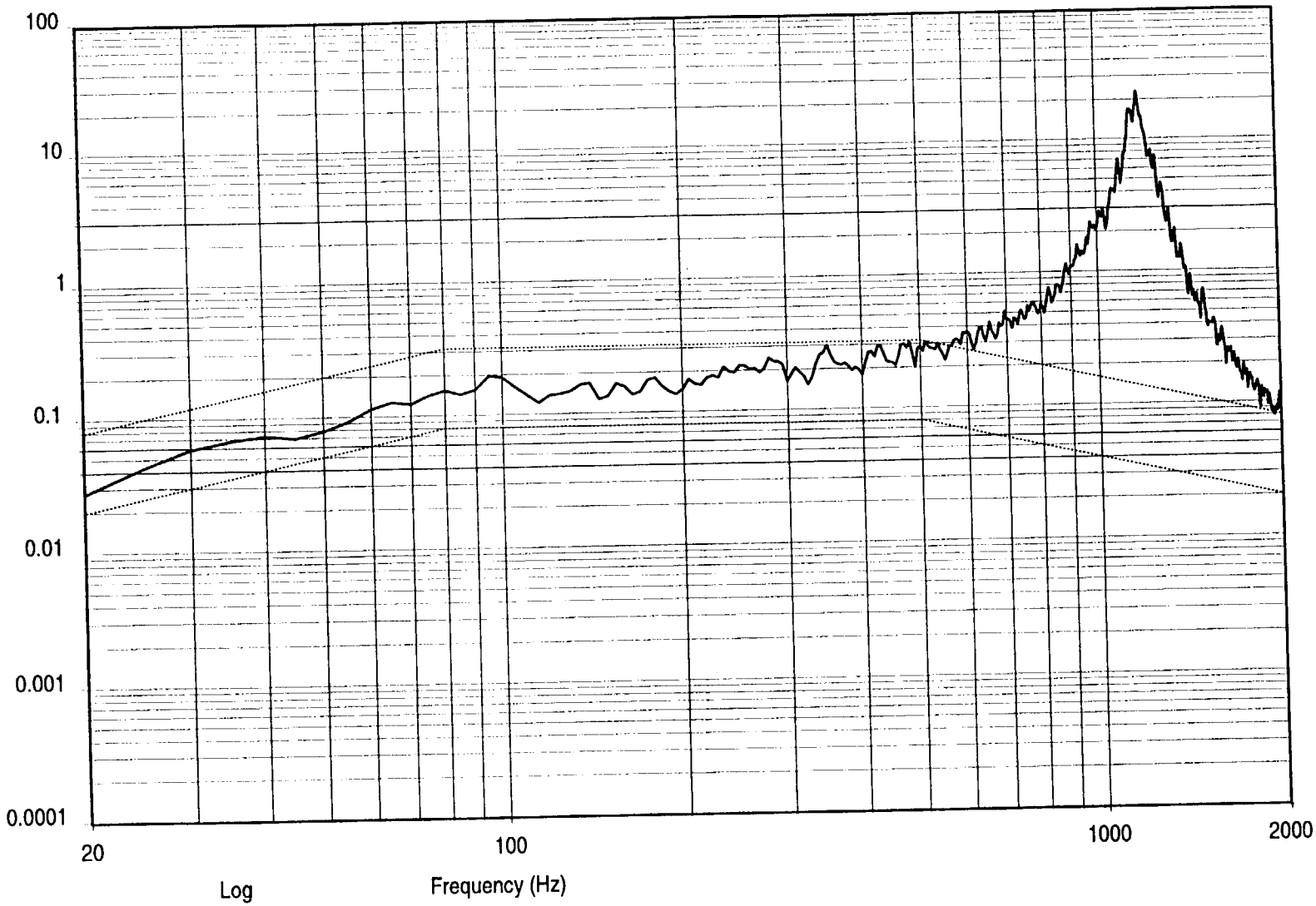
ENG 217

UNIT Y AXIS

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

Log
g²/Hz

DOF 120

RMS:
56.174 g

15:52:05
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
X AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

11-4-98

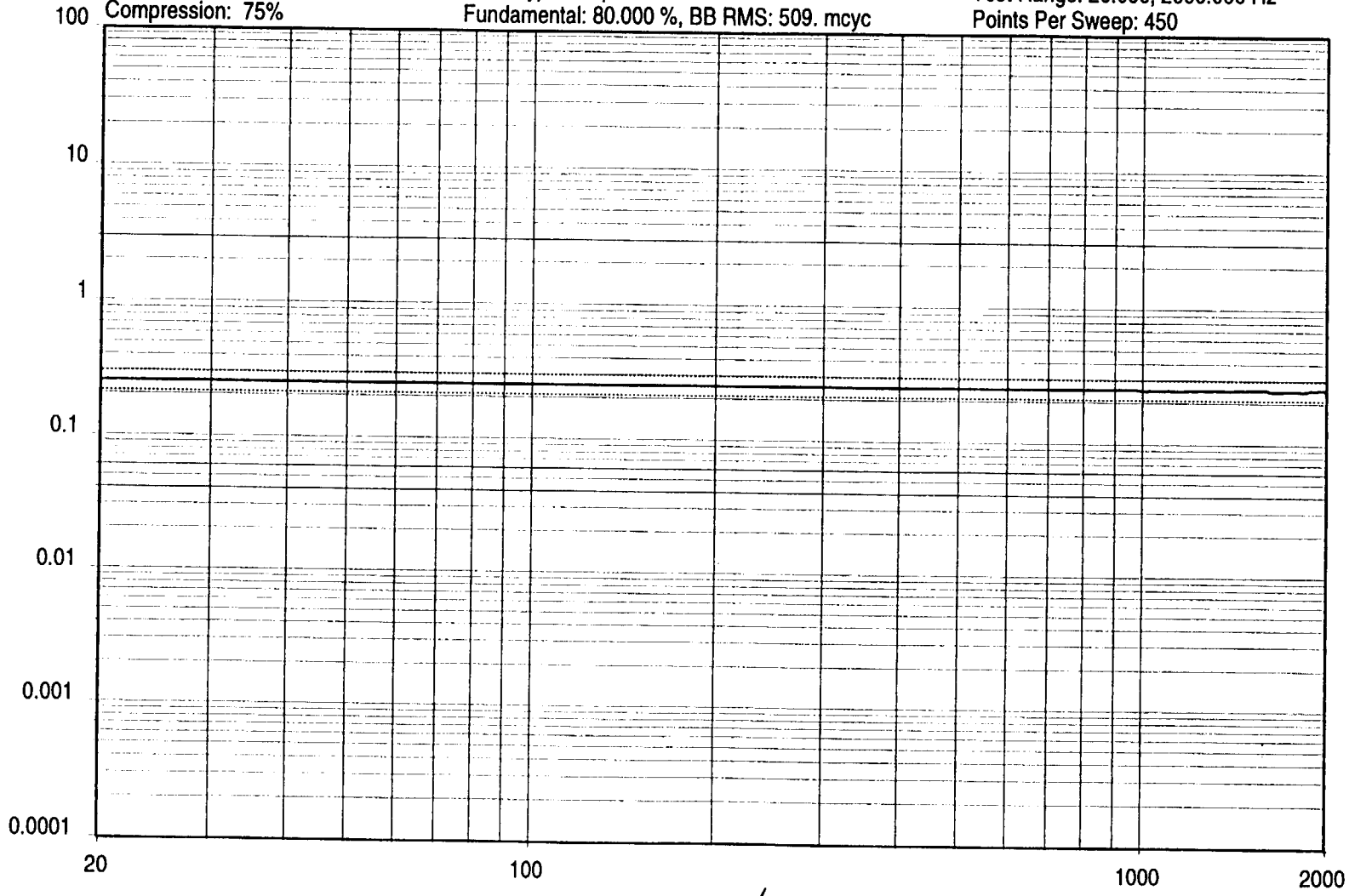
ENG 217 191

UNIT X AXIS

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

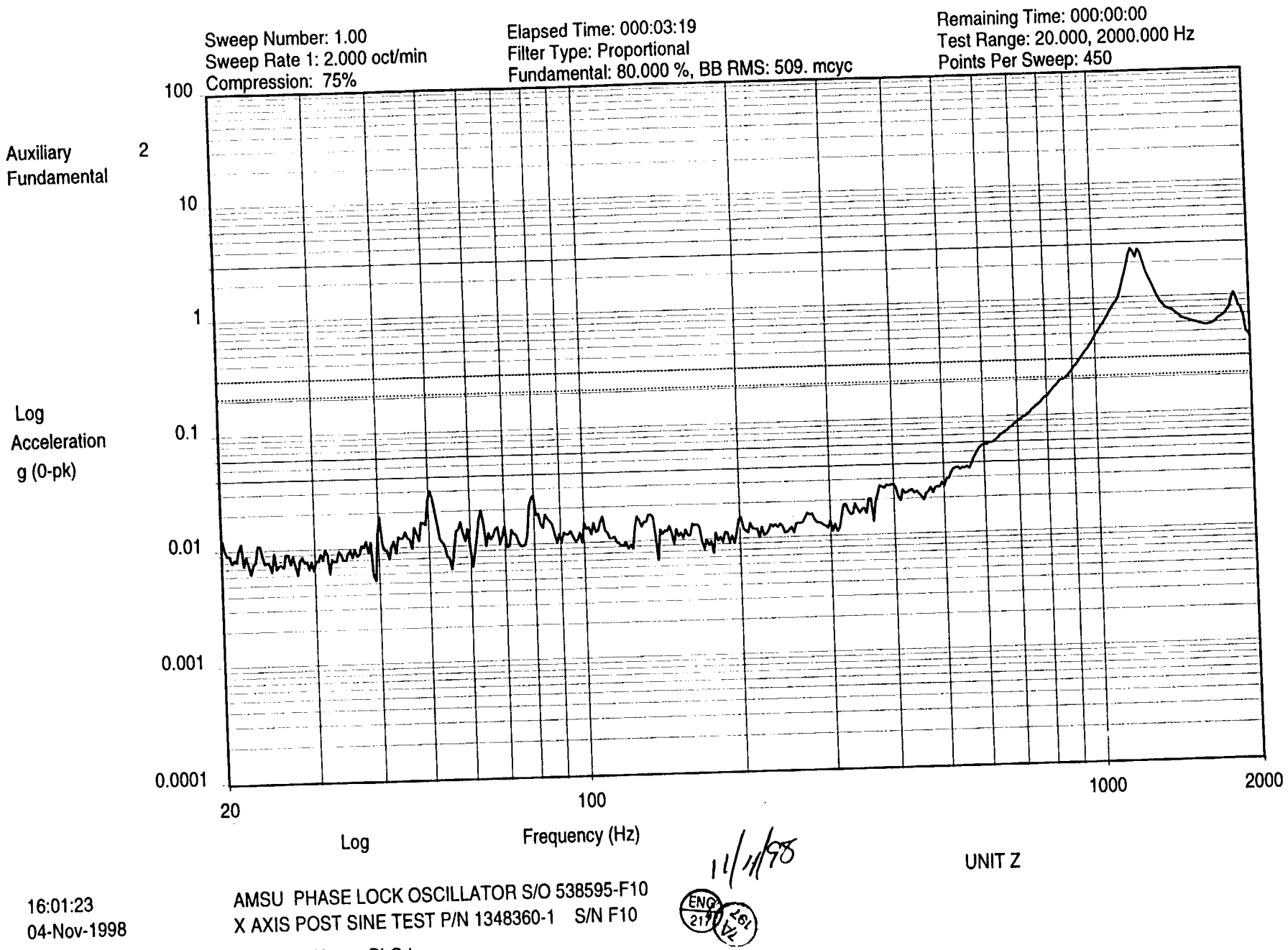
Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



16:01:18
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11/4/98
ENG 217 24 197



11/11/98

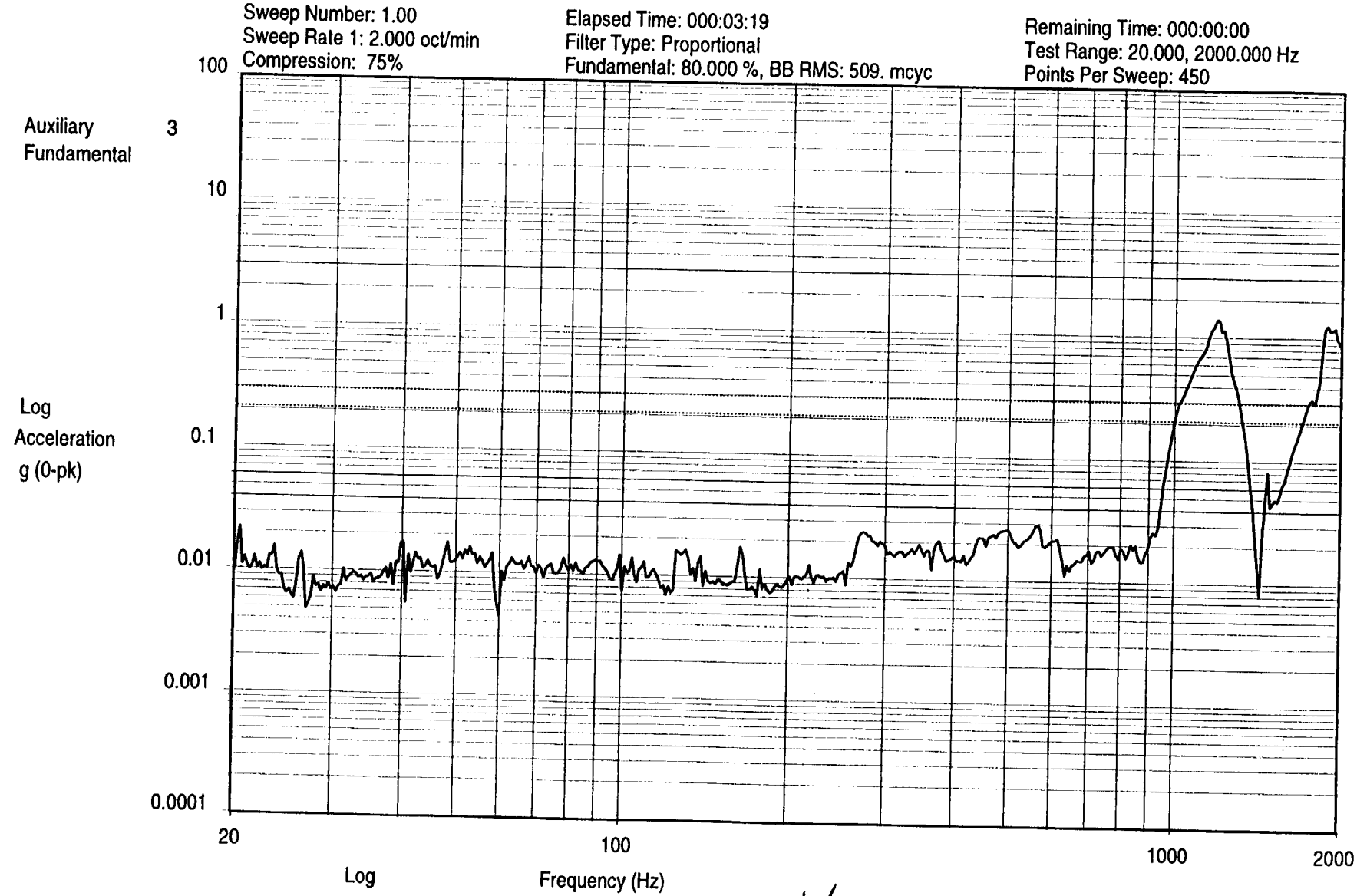
UNIT Z

16:01:23
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS POST SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

ENG 217 7A 197



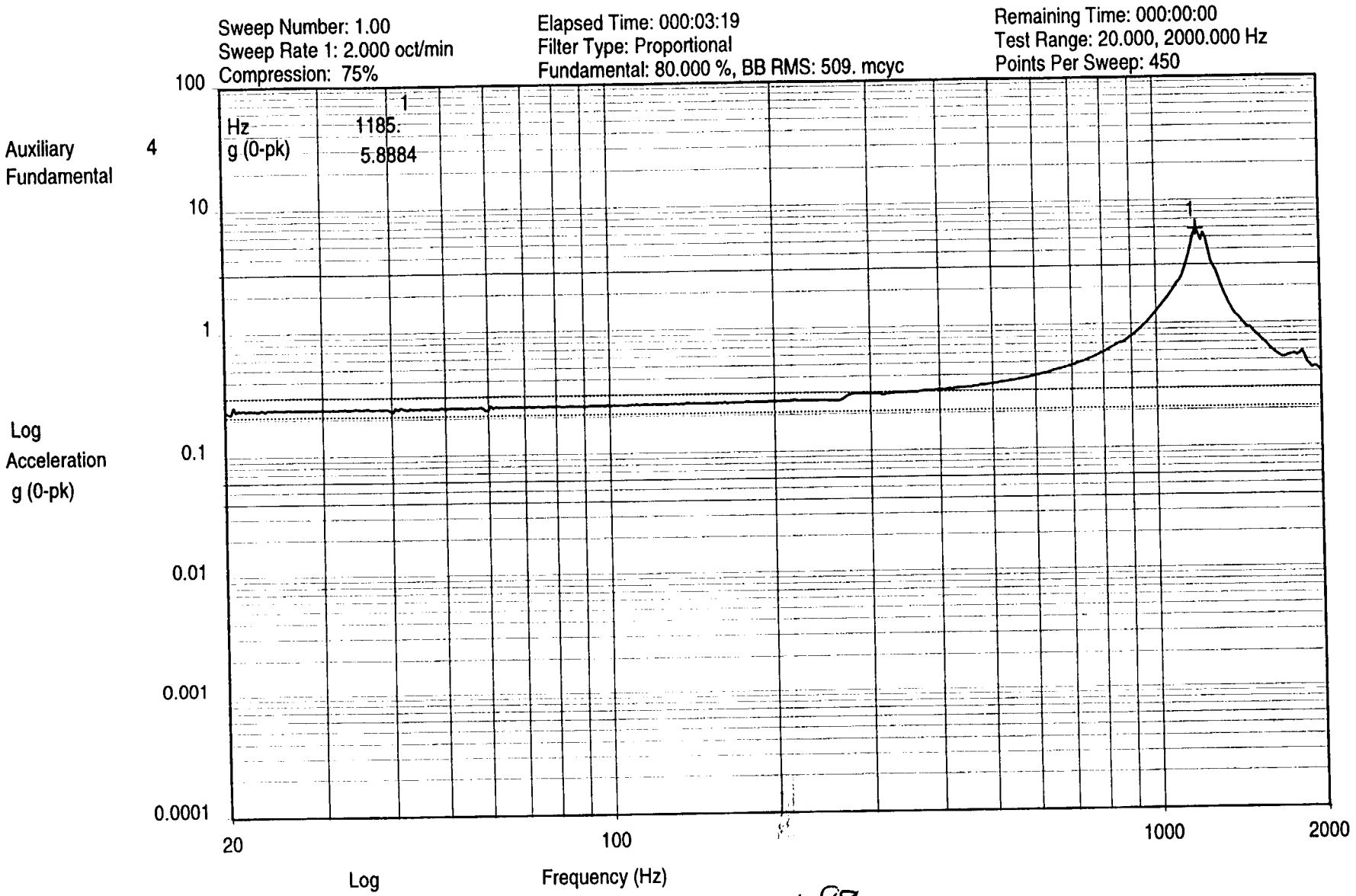
16:01:27
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11/4/98

ENG 217 ZA 197

UNIT Y



11-4-98

UNIT X

16:01:36
04-Nov-1998

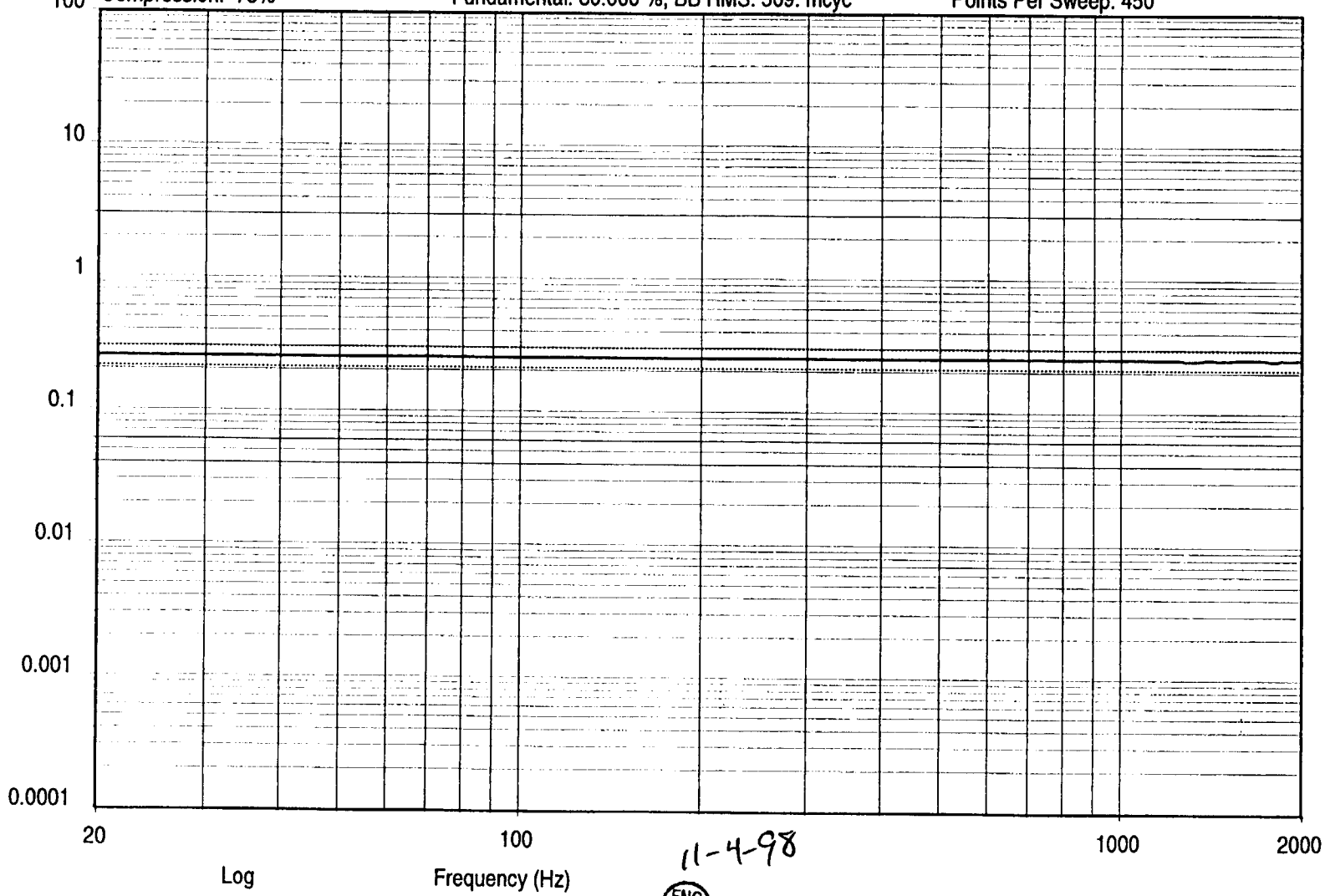
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
X AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217 TA 197

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11-4-98

ENG 217 19.1 AV

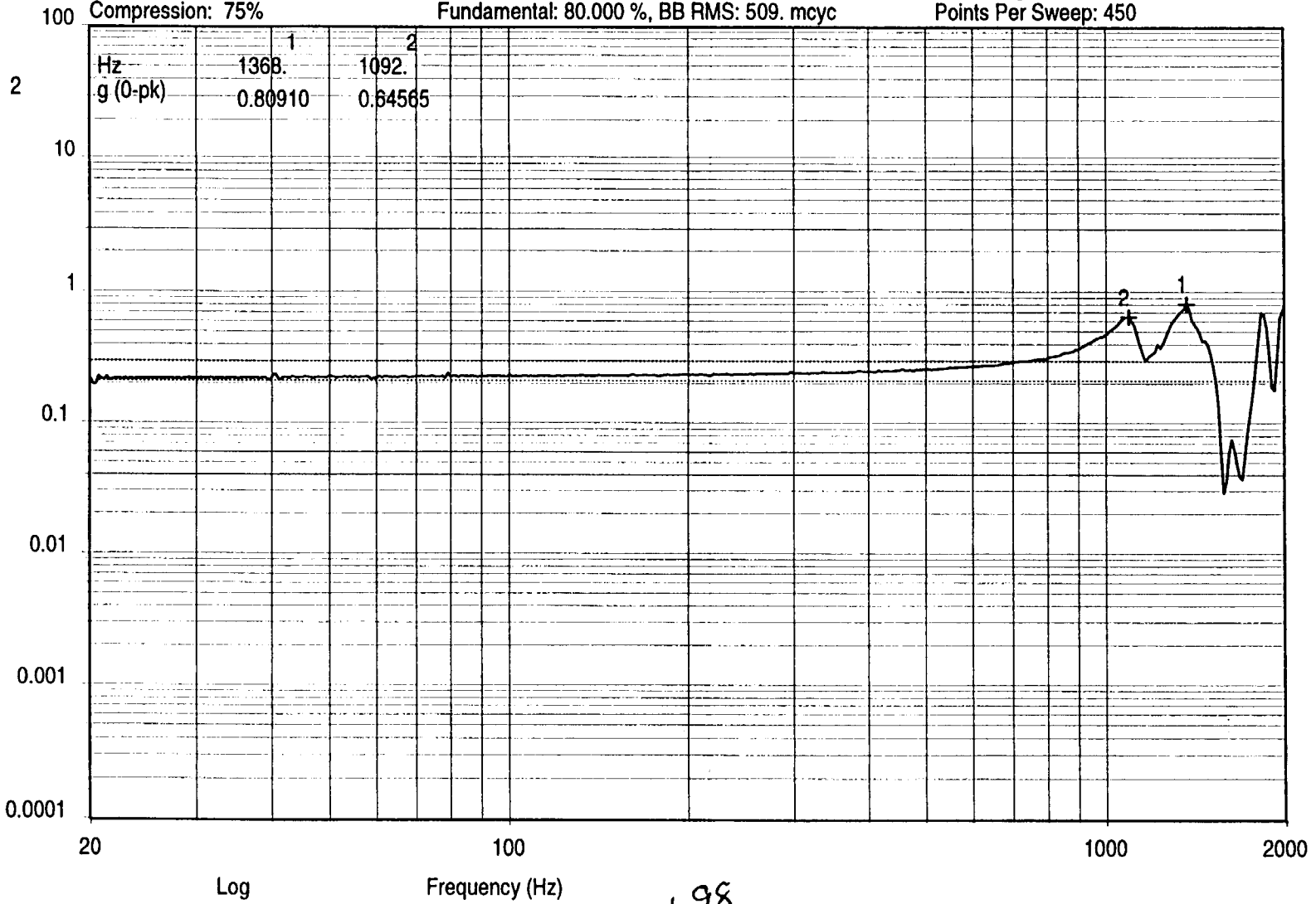
16:34:04
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



11-4-98

UNIT Z

16:51:45
04-Nov-1998

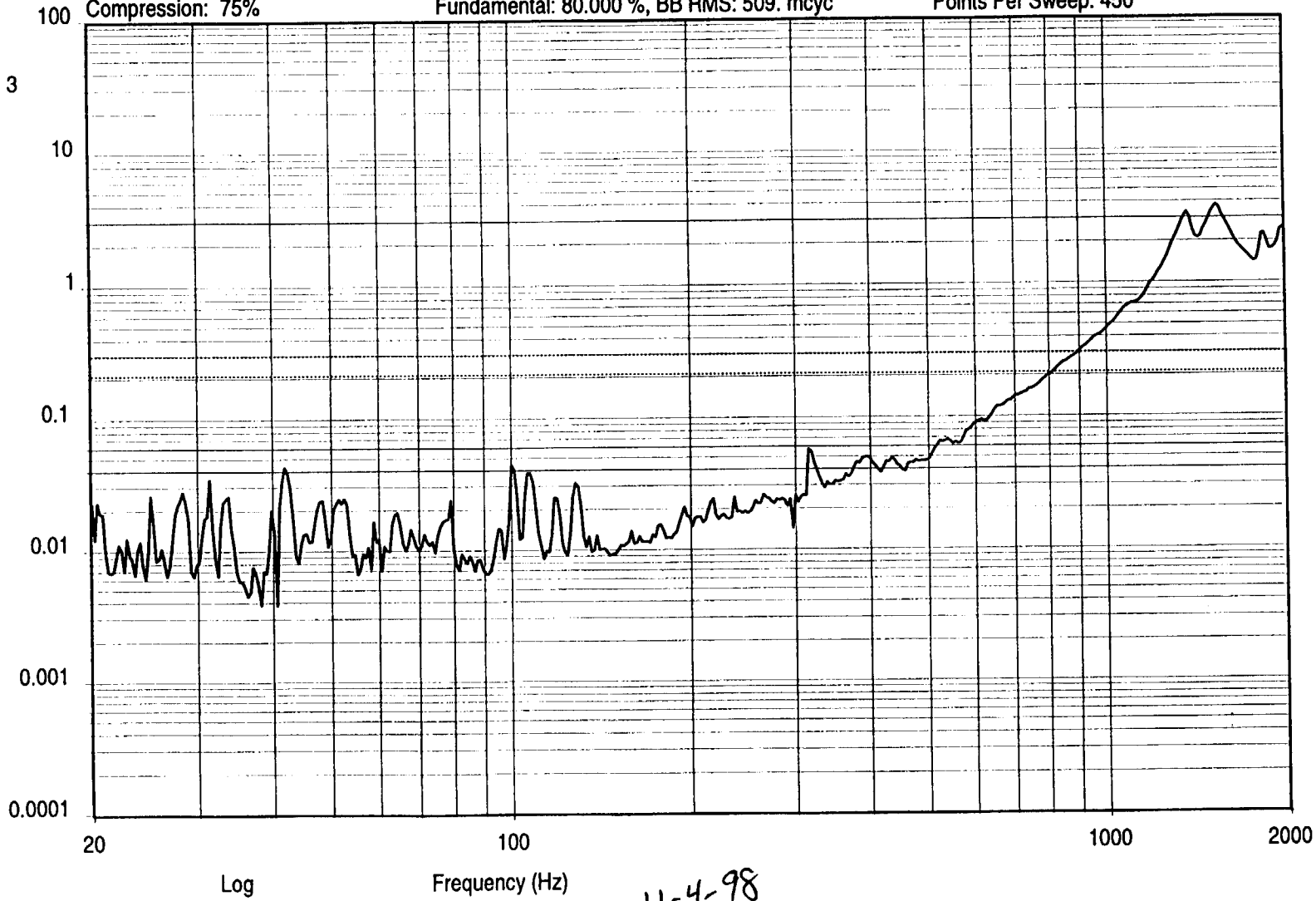
AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217 A7 197

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



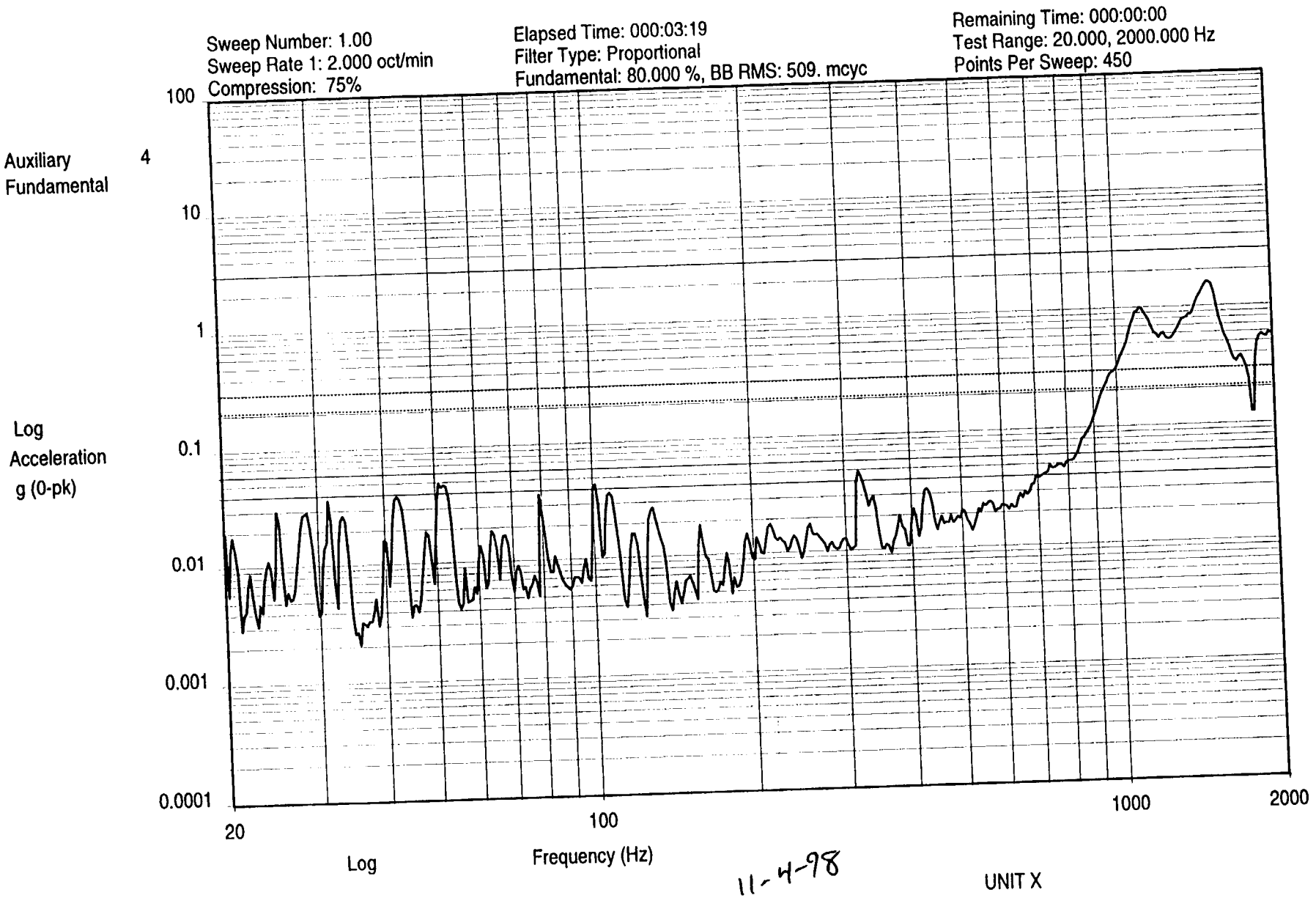
11-4-98

UNIT Y

16:34:12
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

ENG 217 A1



11-4-98

UNIT X

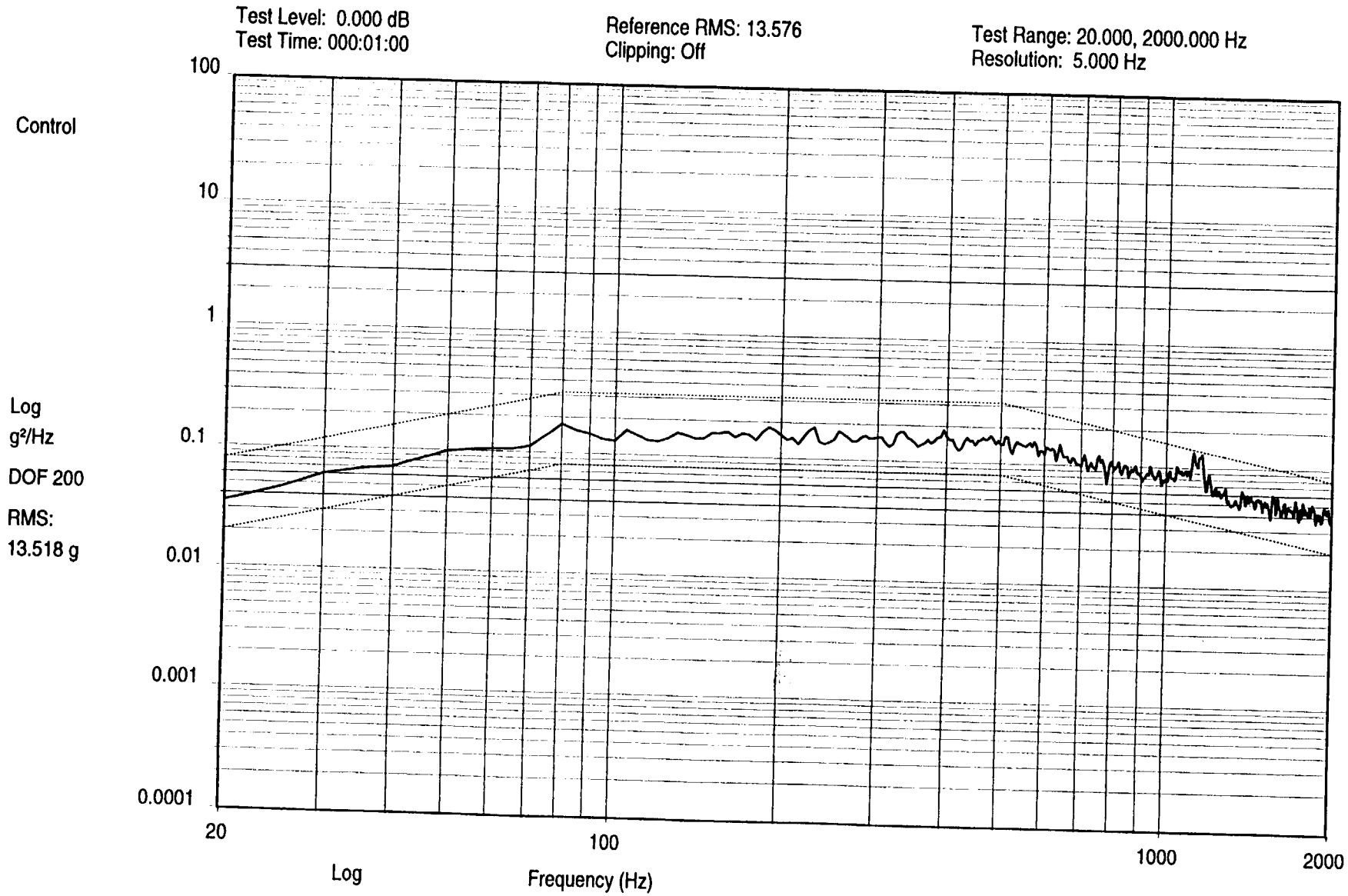
16:34:17
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS SINE TEST P/N 1348360-1 S/N F10

Sine Test Name: PLO.tmp

ENG 217

TA 19



17:13:00
04-Nov-1998

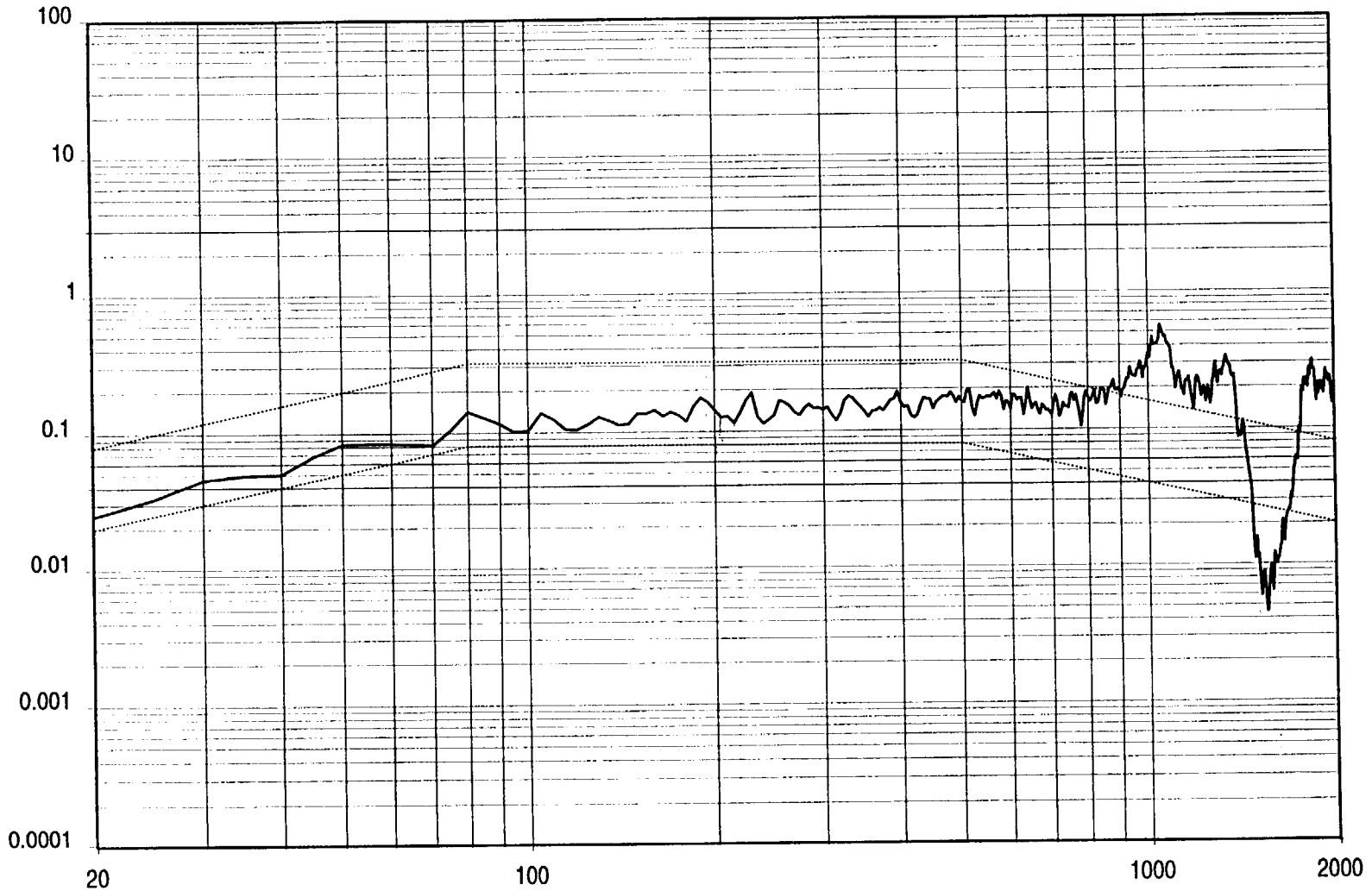
AMSU PHASE LOCK OSCILLATOR S/O538595
Z AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

ENG 217 7A 197
11-4-98

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 2

Log
g²/Hz
DOF 120
RMS:
18.051 g

UNIT Z AXIS

17:13:07
04-Nov-1998

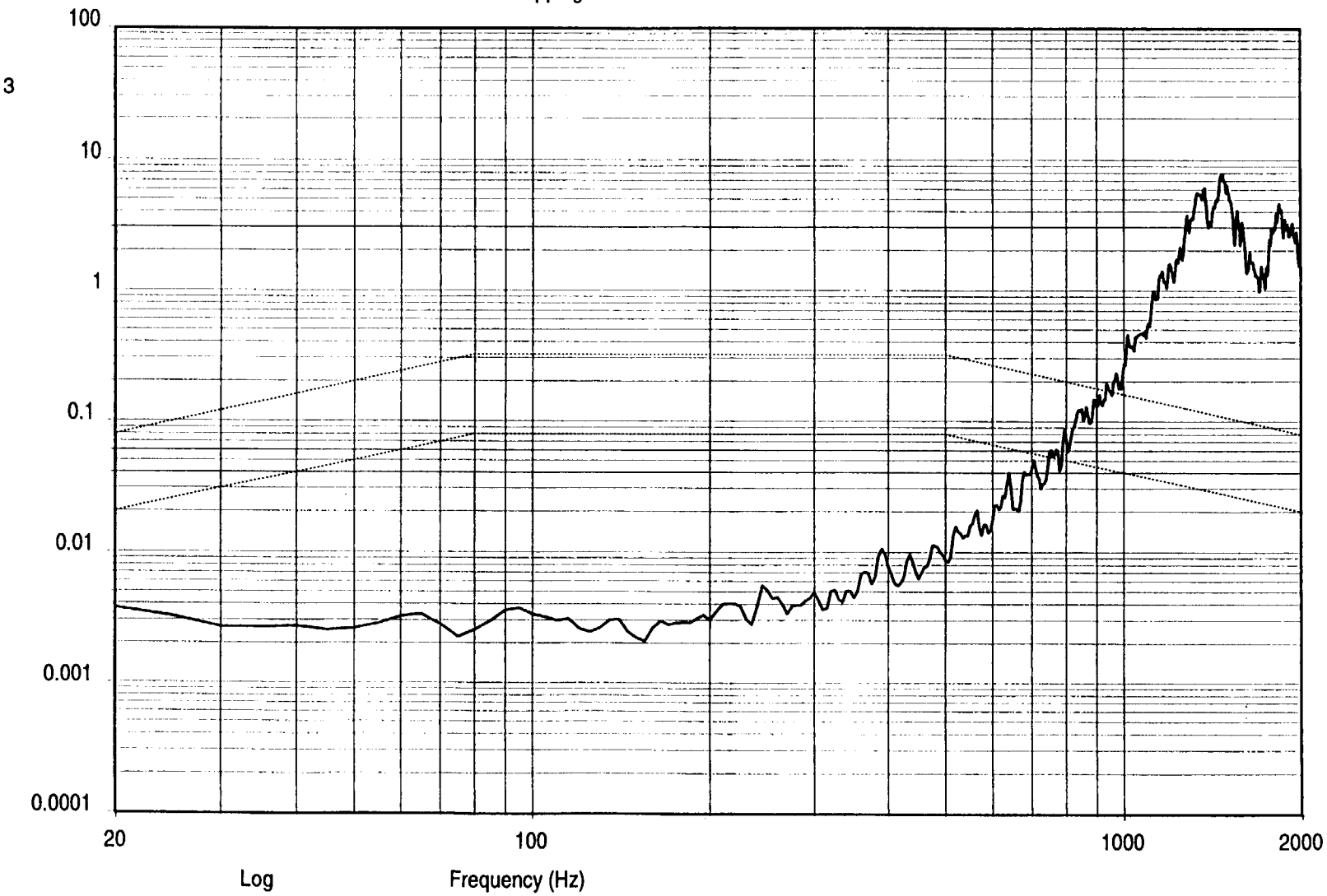
AMSU PHASE LOCK OSCILLATOR S/O538595
Z AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

ENG 217

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



UNIT Y AXIS

17:13:11
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Z AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

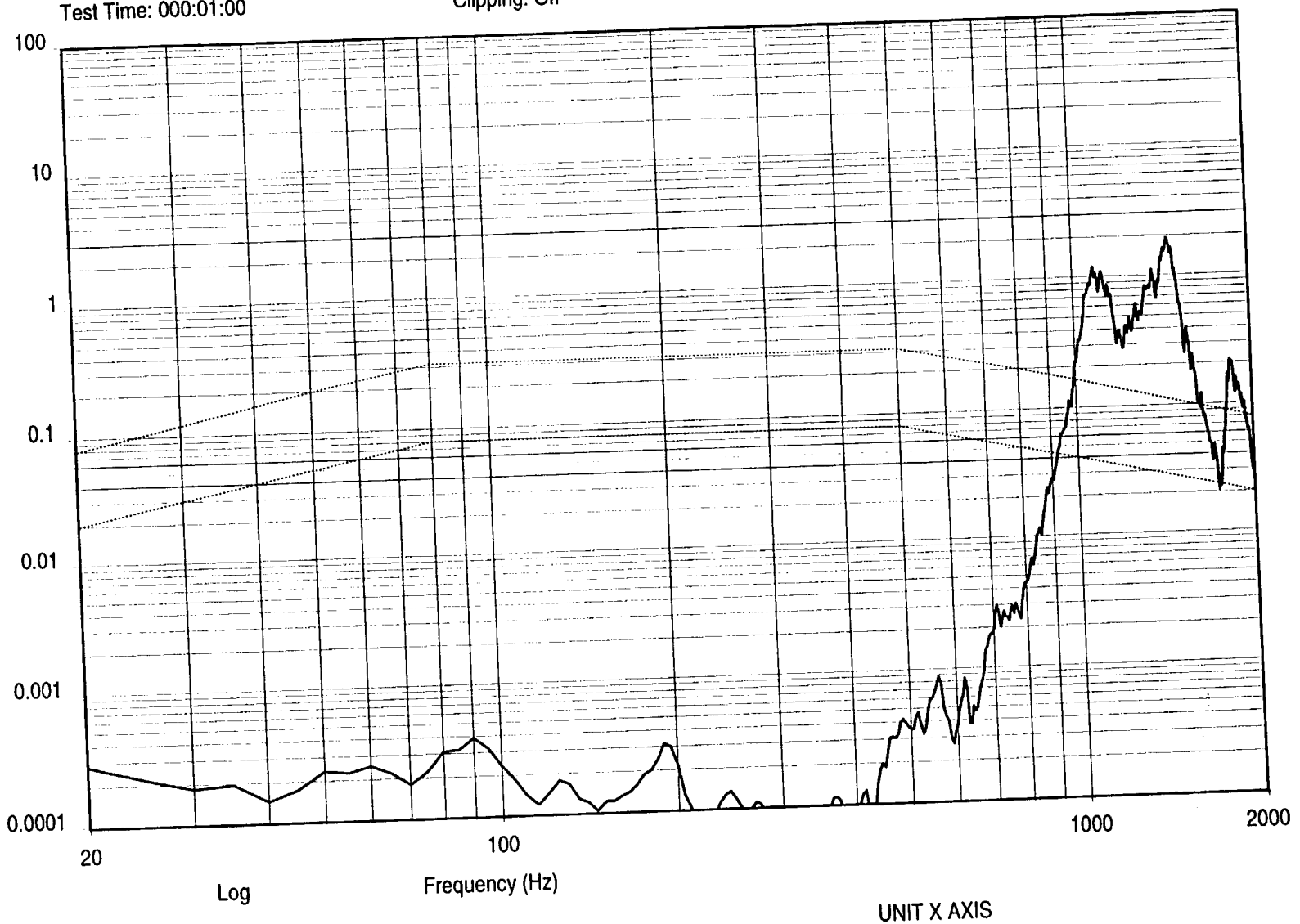
ENG 217 TV 197

11-4c

Test Level: 0.000 dB
Test Time: 000:01:00

Reference RMS: 13.576
Clipping: Off

Test Range: 20.000, 2000.000 Hz
Resolution: 5.000 Hz



Auxiliary 4

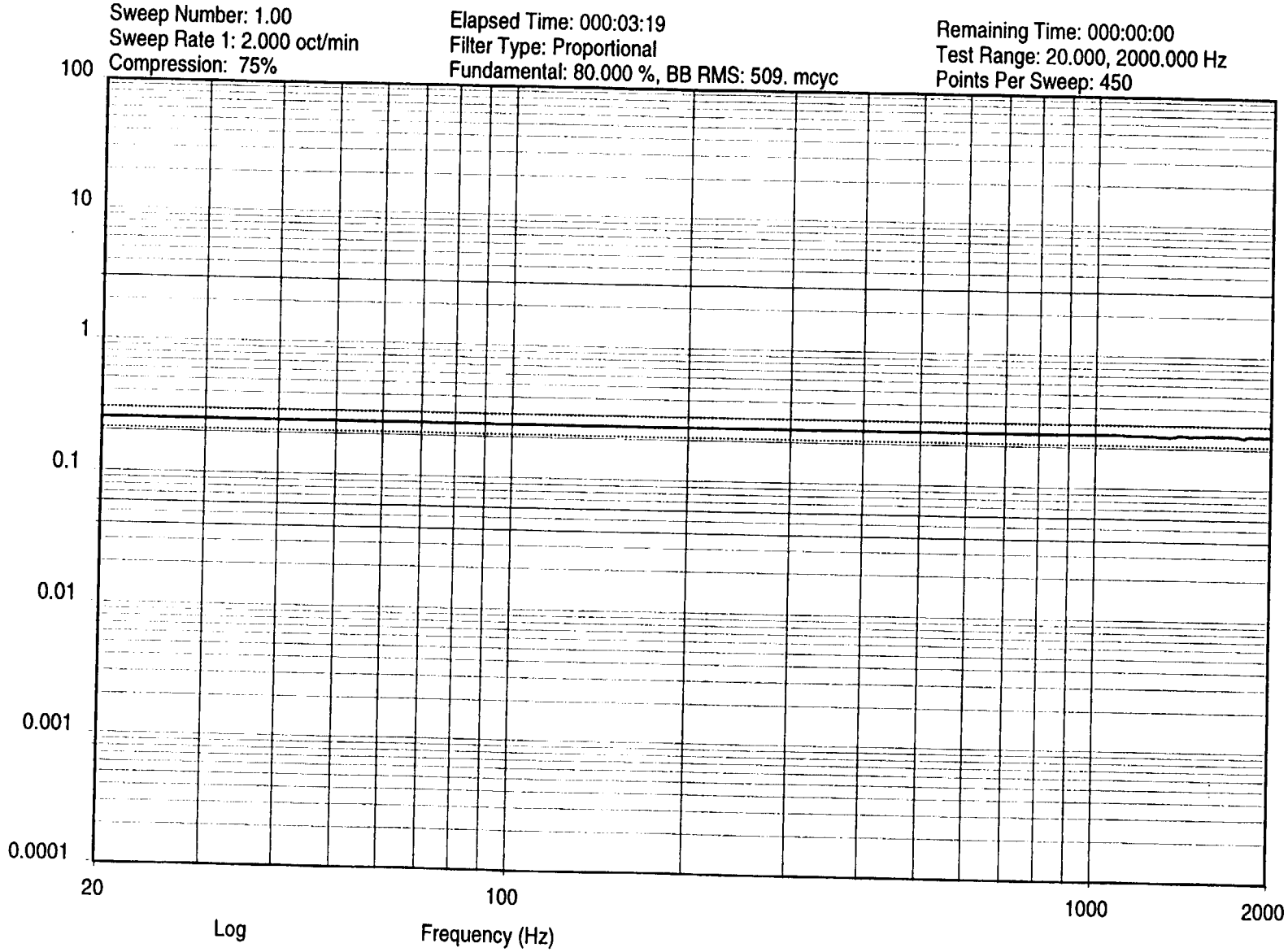
Log
g²/Hz
DOF 120
RMS:
21.995 g

UNIT X AXIS

17:13:15
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O538595
Z AXIS TEST P/N 1348360-1 S/N ,F10
Test Name: PLO.tmp

ENG 217

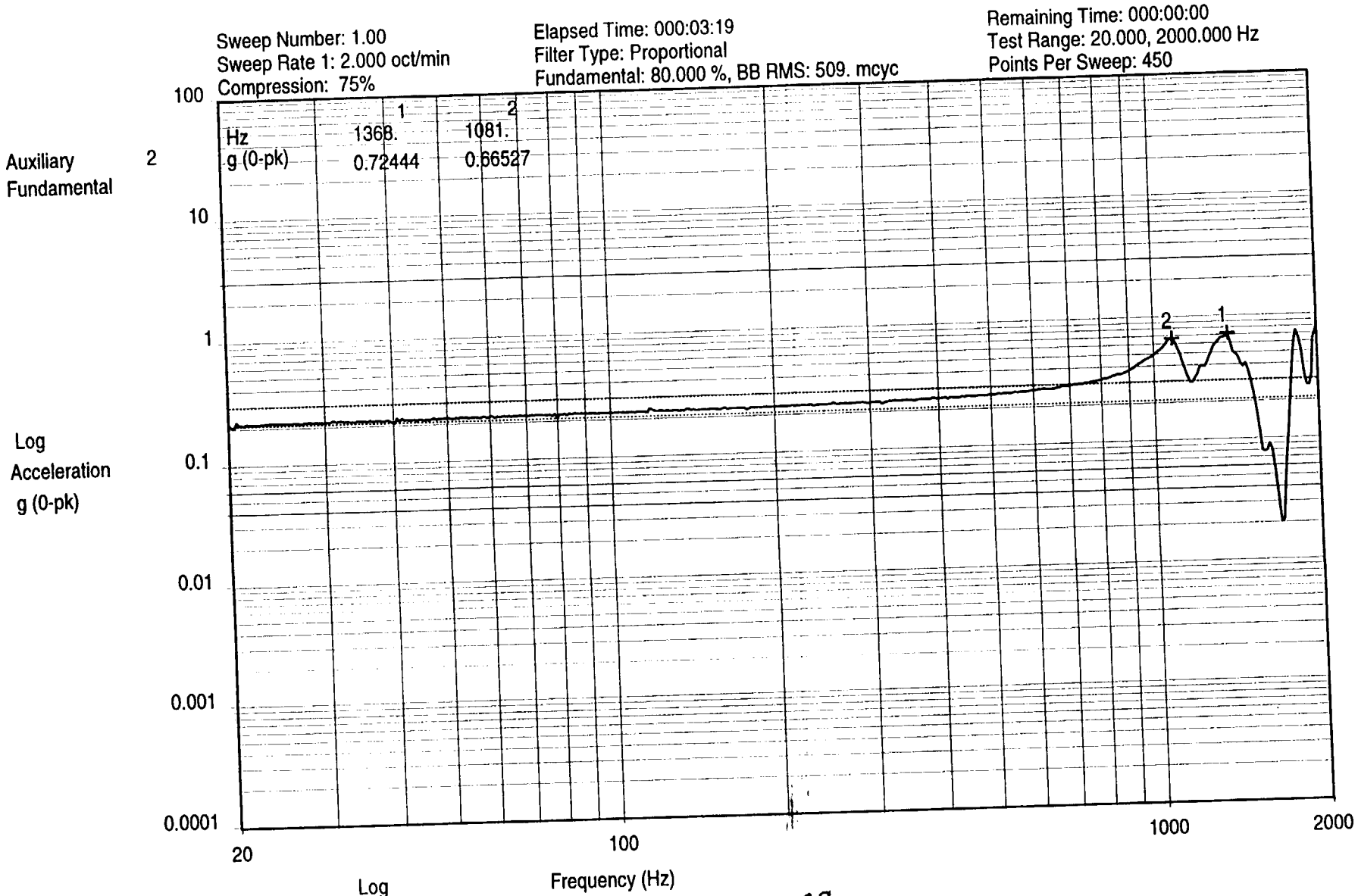


17:23:25
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

ENG 217 ZA



11-4-98

17:24:01
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS POST SINE TEST P/N 1348360-1 S/N F10

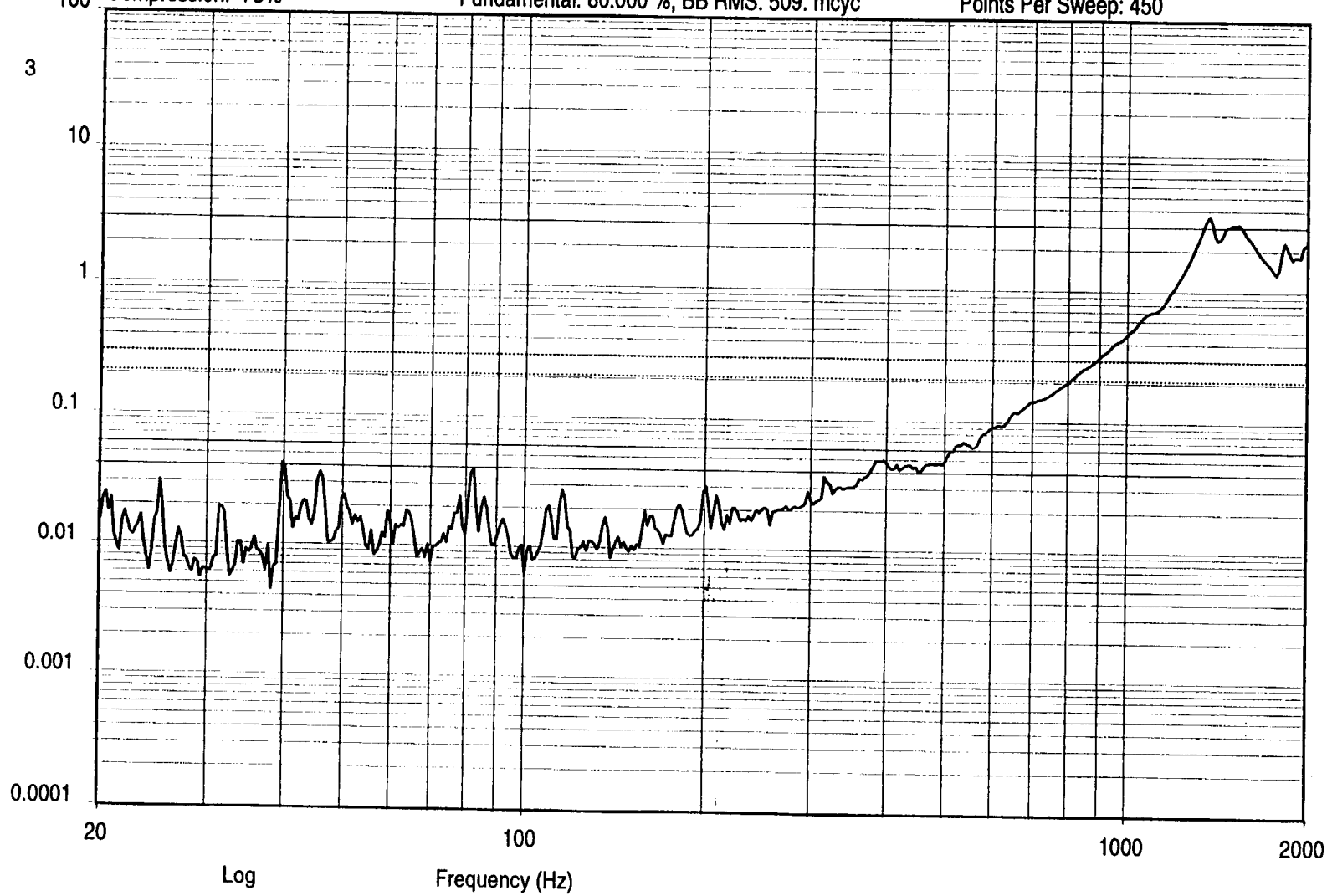
Sine Test Name: PLO.tmp

ENG 217 RA 197

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



17:24:05
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

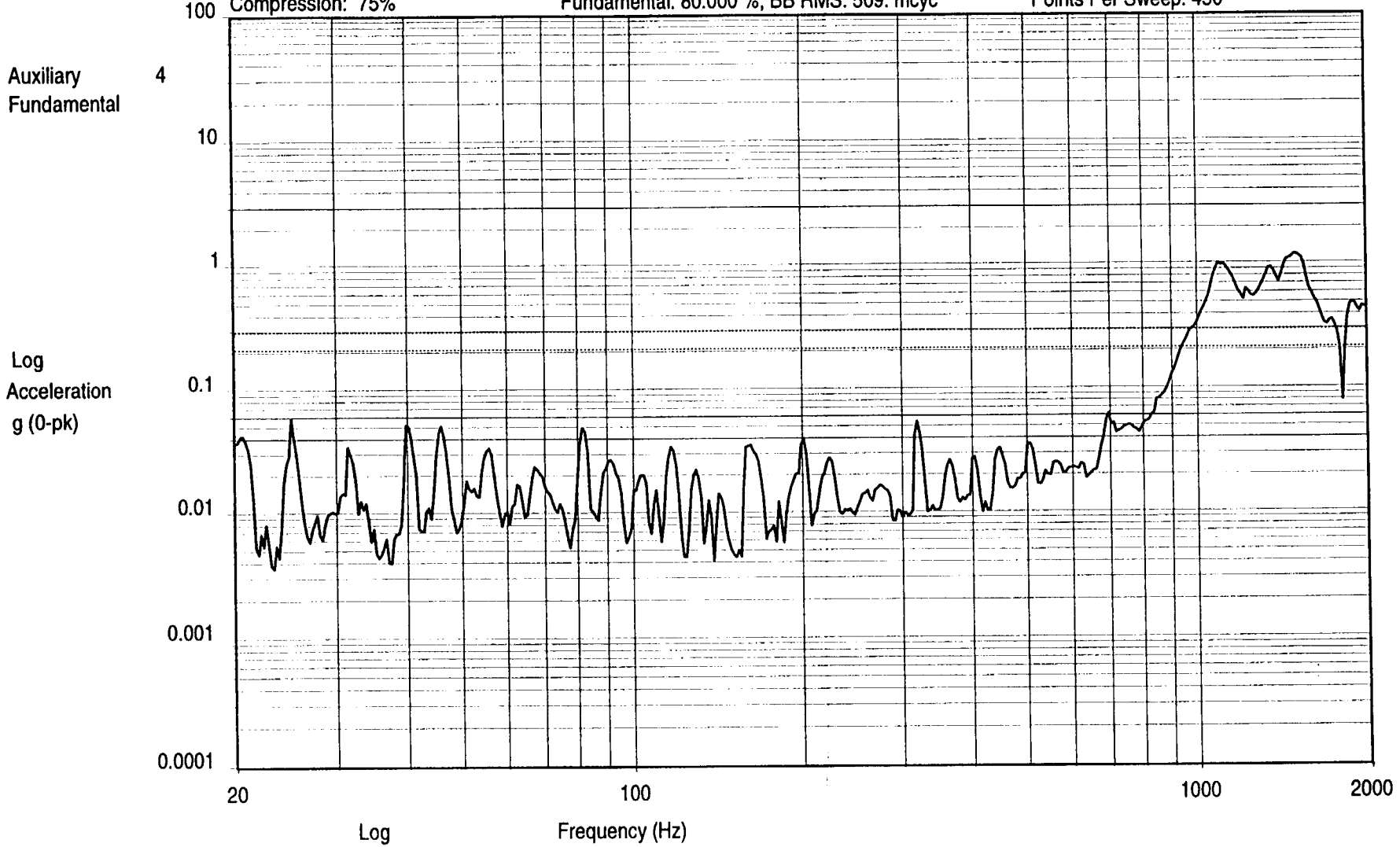
UNIT Y

ENG
TA 197

Sweep Number: 1.00
Sweep Rate 1: 2.000 oct/min
Compression: 75%

Elapsed Time: 000:03:19
Filter Type: Proportional
Fundamental: 80.000 %, BB RMS: 509. mcyc

Remaining Time: 000:00:00
Test Range: 20.000, 2000.000 Hz
Points Per Sweep: 450



17:24:09
04-Nov-1998

AMSU PHASE LOCK OSCILLATOR S/O 538595-F10
Z AXIS POST SINE TEST P/N 1348360-1 S/N F10
Sine Test Name: PLO.tmp

11-4-98

ENG 217
TA 197

UNIT X

Section 3A: Frequency and Power Hysteresis - F09

Worst case frequency and power hysteresis at 22°C for S/N F09 are 11 kHz and approximately 0.4 dBm, respectively.

TEST DATA SHEET 7 (Sheet 1 of 3)
Temperature Cycling (Paragraph 4.2.2)

Test Setup Verified: _____ / _____
Signature

Temperature Cycle	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6
Frequency 57.290344 GHz ±200 kHz	57.290327 490 GHz	57.290328 285 GHz	57.290330 856 GHz		N	
Output Power 17 to 20 dBm	17.95 dBm	17.8 dBm	17.59 dBm		A	
Frequency 57.290344 GHz ±200 kHz	57.290335 074 GHz	57.290335 877 GHz	57.290338 062 GHz			
Output Power 17 to 20 dBm	18.03 dBm	18.05 dBm	17.85 dBm			

11/15/98

	Beginning of cycle 3
ambient →	freq = 57.290330050 GHz
	P_o = 17.7 dBm

	freq = 57.290338062
ambient →	P_o = 17.85 dBm

Shop Order No.: 538596
Operation: 0170
Unit Serial No.: F09
Date: 11-13-98

Test Engineer: _____
Quality Control: _____ NOV 18 '98
Govt. Rep.: _____ 14/18/98

Section 3B: Frequency and Power Hysteresis - F10

Worst case frequency and power hysteresis at 22°C for S/N F10 are 12 kHz and approximately 0.1 dBm, respectively.

TEST DATA SHEET 7 (Sheet 1 of 3)
Temperature Cycling (Paragraph 4.2.2)

Test Setup Verified: _____
Signature

Temperature Cycle	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6
Frequency 57.290344 GHz ±200 kHz	57.290 338 986 GHz	57.290336 775 GHz	57.290343 942 GHz			
Output Power 17 to 20 dBm	17.85 dBm	17.8 dBm	17.8 dBm		11-5-98	
Frequency 57.290344 GHz ±200 kHz	57.290343 GHz	57.290347 GHz	57.290348 725 GHz			
Output Power 17 to 20 dBm	17.80 dBm	17.83 dBm	17.9 dBm			

Shop Order No.: 538595

Operation: 0170

Unit Serial No.: F10

Date: 11-5-98

Test Engineer: _____

Quality Control: _____ NOV 10 '98

Govt. Rep.: _____ 11/11/98

Section 4A: EMI/RE02 - F09

Not required. Qualification Testing done on S/N's F01, F02.

Section 4B: EMI/RE02 - F10

Not required. Qualification Testing done on S/N's F01, F02.

Section 5A: Final Functional Testing - F09

This section contains the results of a full functional test over temperature taken after PLO F09 endured thermal cycling. All tests passed.

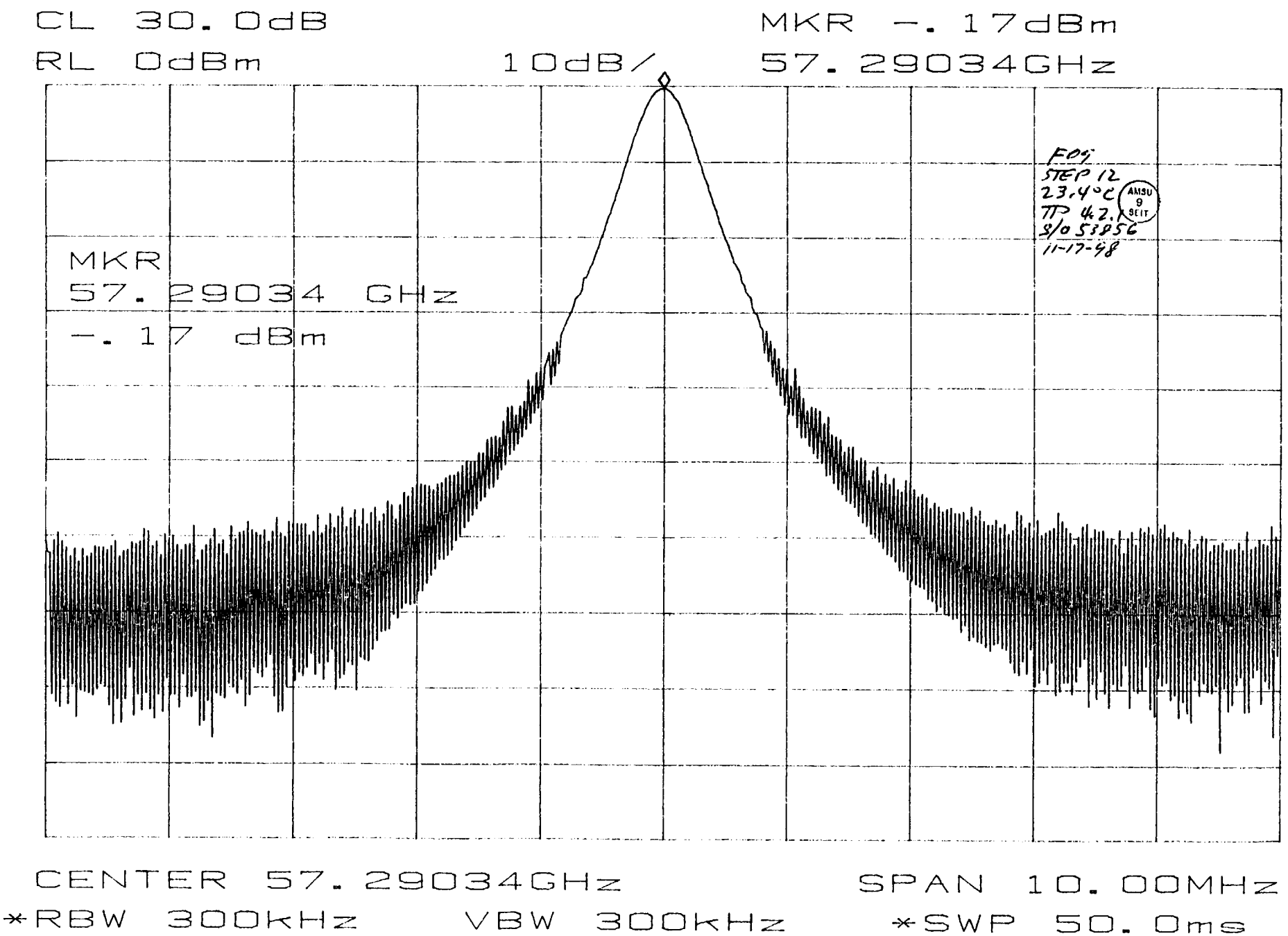
TEST DATA SHEET 6C (Sheet 1 of 4)
Functional Testing (Paragraph 4.2.1)

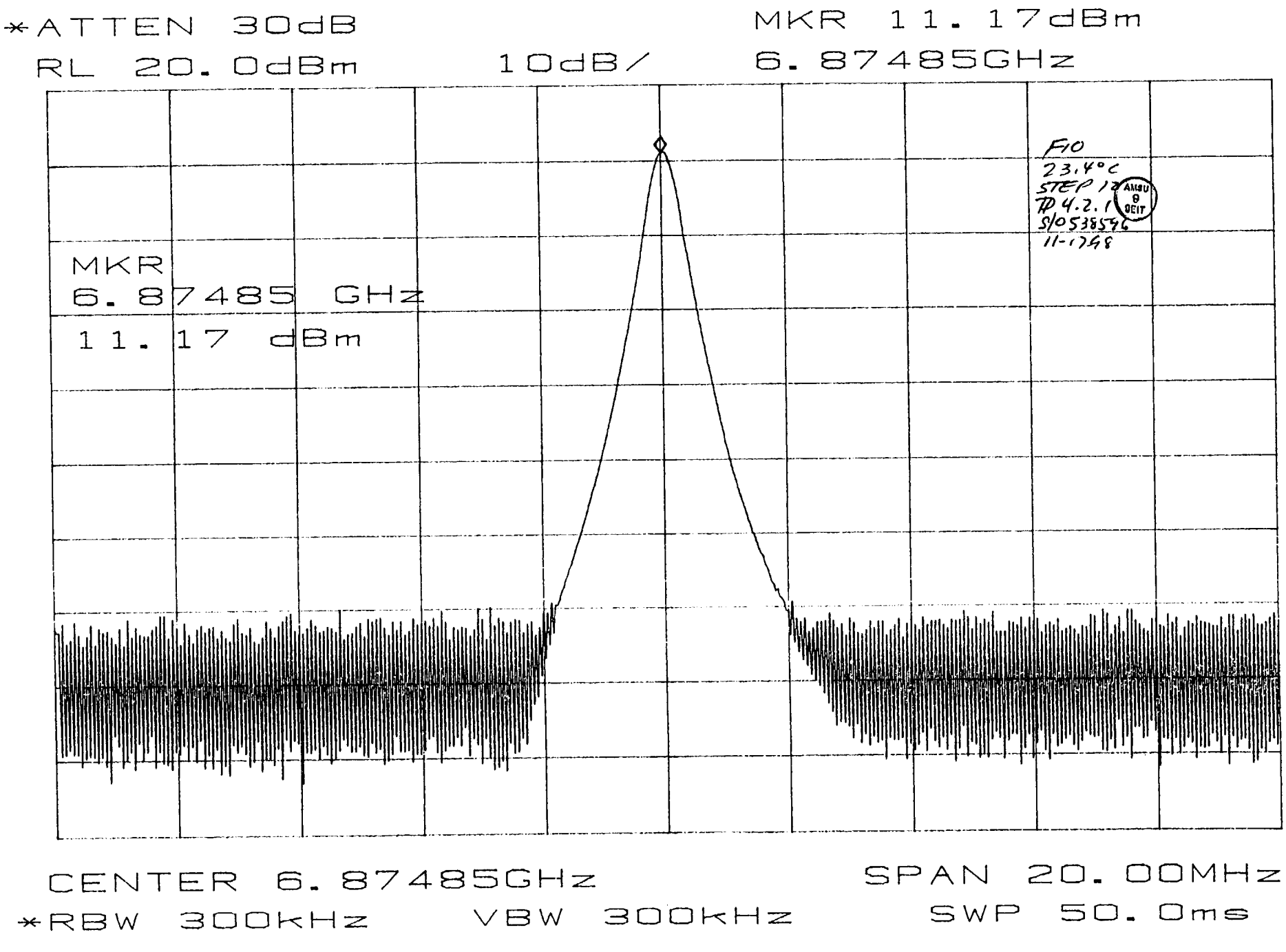
Test Setup Verified: _____ Post-Thermal Cycling CPT
Signature

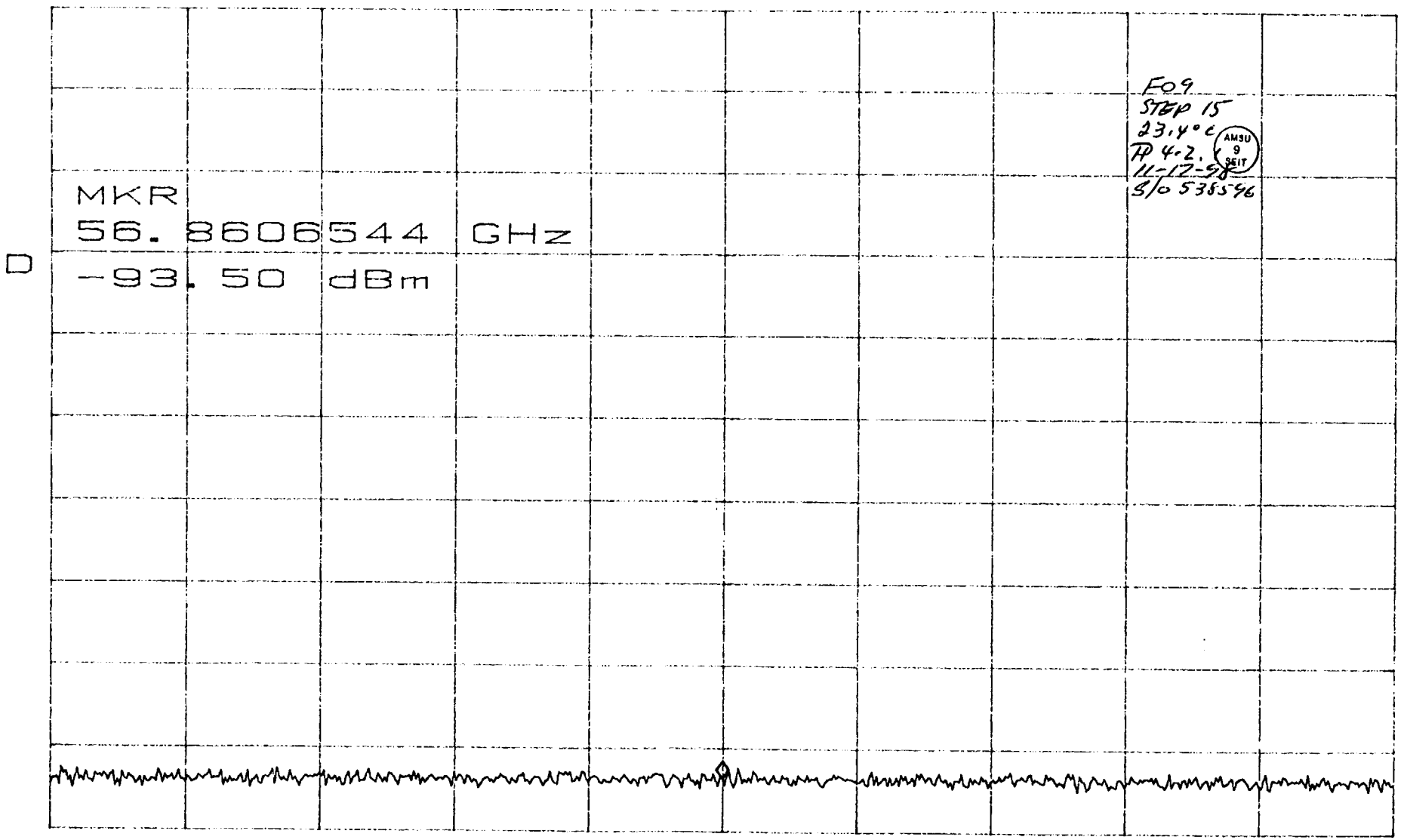
Paragraph 4.2.1.3, Functional Testing:

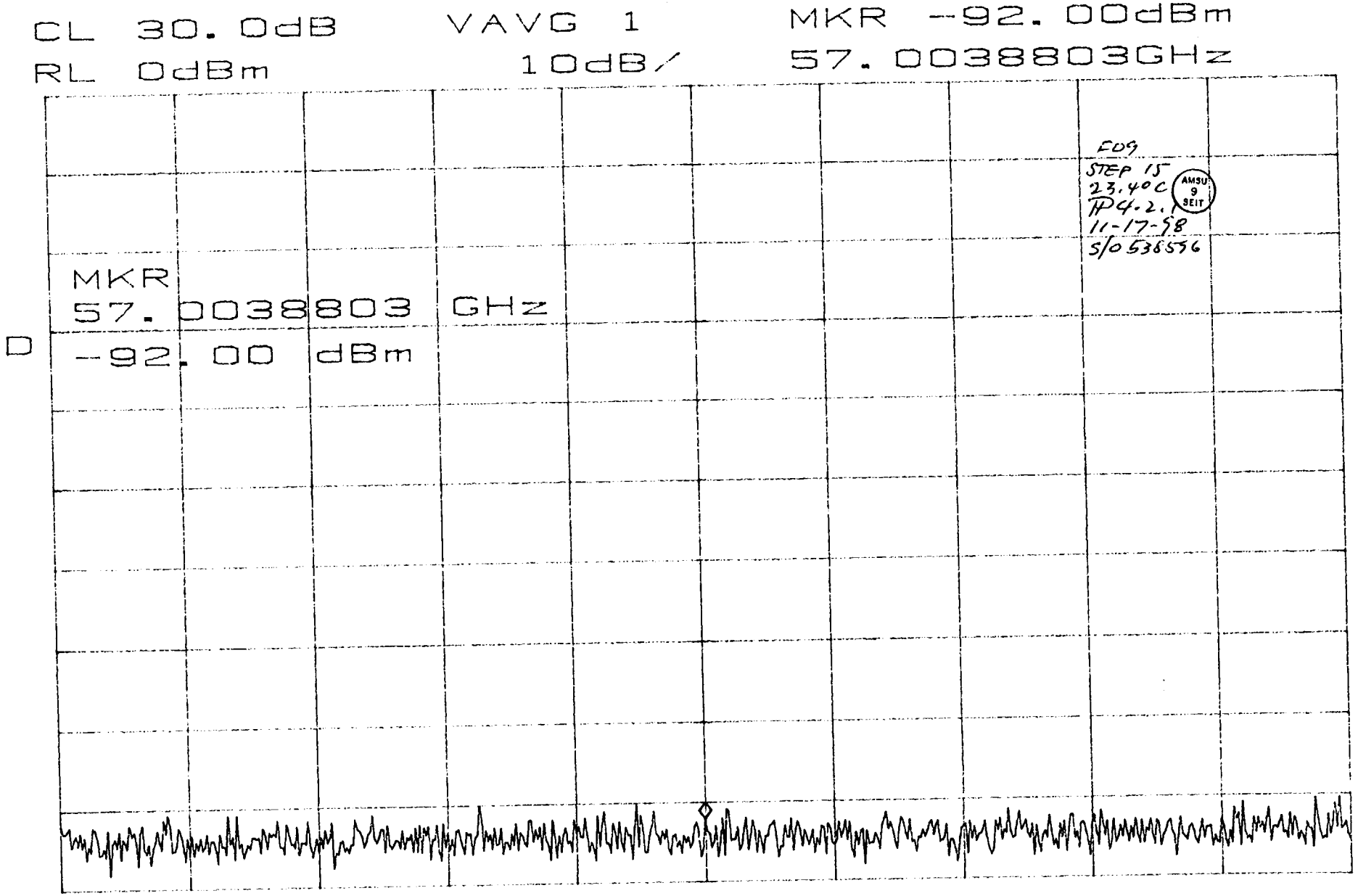
Step	Test	Expected	Measured	Pass/ Fail
1	Potential Difference from ± 15 V RTN to:			
	PLO Base Plate	< 1.0 Vac	0.03 Vac	Pass
	Spectrum Analyzer	< 1.0 Vac	0.02 Vac	Pass
	Frequency Counter Chassis	< 1.0 Vac	0.1 Vac	Pass
	Power Meter Chassis	< 1.0 Vac	0.07 Vac	Pass
4	Evacuate vacuum chamber and record pressure	$<10^{-2}$ torr	Pressure = _____ N/A	*
5	Thermal couple readings	TC1 = 22 ± 2 °C	TC1 = 24.0 °C	Pass
			TC2 = 23.9 °C	N/A
			TC3 = 23.1 °C	N/A
6	DRO L/A	0 to 1V	DRO L/A = 87m V	Pass
	PLO L/A	S/N: F06, F08 = 14.6 ± 0.4V S/N: F07 = 0 to 1V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.53 V	Pass
	Is PLO locked?	Yes	Yes yes No _____	Pass
7	PLO Frequency	57.290344 ± .0002 GHz	Freq. = 57.290331910 GHz	
	PLO Power	17 to 20 dBm	P = 18.11 dBm	Pass
8	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.14 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.14 V	Pass
	IM1 Current	600 mA max.	IM1 = 522 mA	Pass
	IM2 Current	100 mA max.	IM2 = -63.9 mA	Pass
	DRO L/A Voltage	0 to 1V	DRO L/A = 86.6m V	Pass
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.53 V	Pass
12	RF Output Power and Frequency	17 to 20 dBm	P = 18.11 dBm	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290331910 GHz	Pass
	Baseplate Temp. (TC1)	TC1 = 22 ±2°C	TC1 = 23.4 °C	Pass

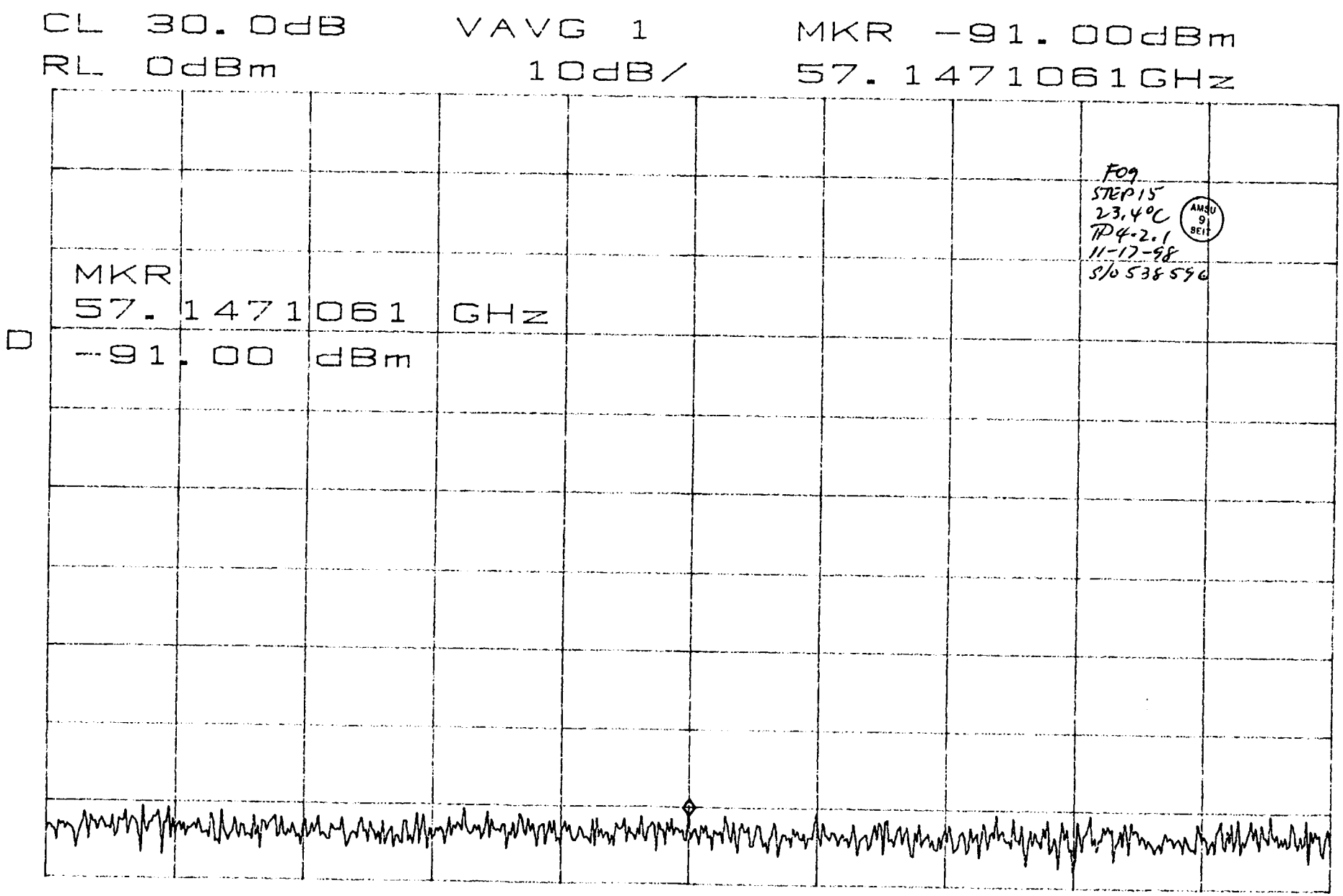
*Record data only if performing test under vacuum

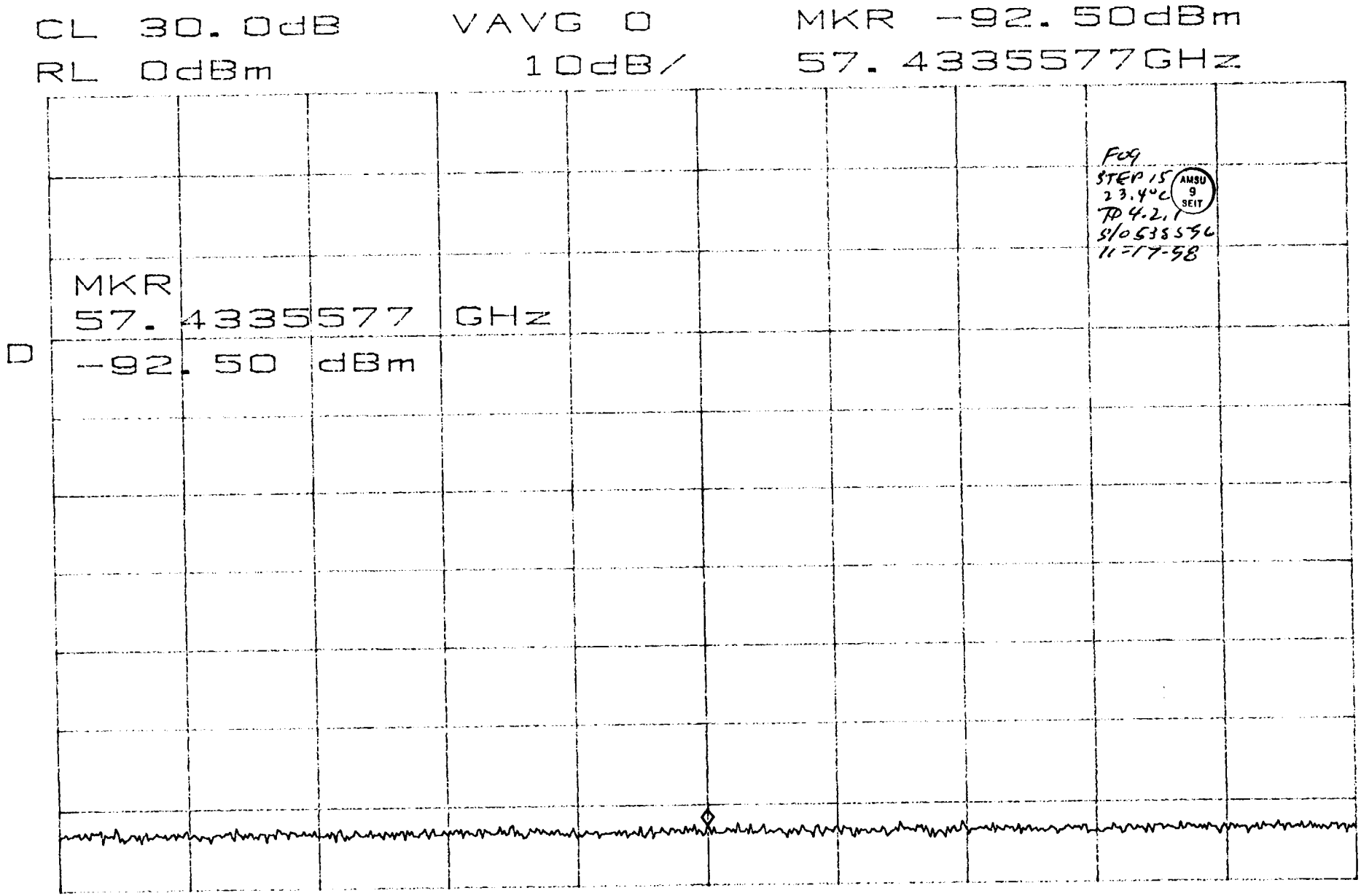

CL 30.0dB
RL 0dBm
10dB/
MKR -.17dBm
57.29034GHz
MKR
57.29034 GHz
-.17 dBm
FOR
STEP 12
23.4°C
TP 42.1
S/O 558056
11-17-98
AMSU
9
SCIT
CENTER 57.29034GHz
SPAN 10.00MHz
*RBW 300kHz
VBW 300kHz
*SWP 50.0ms

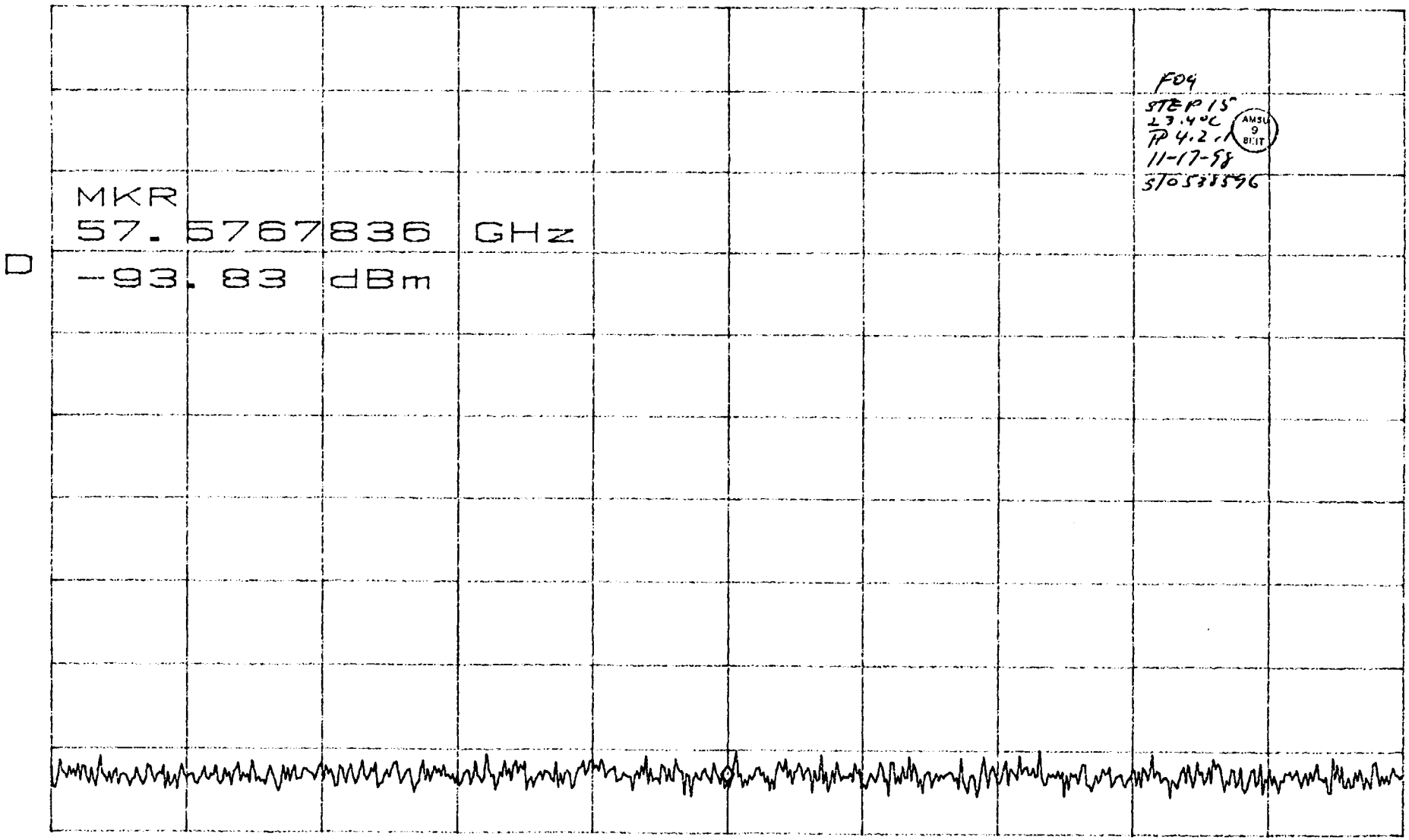

*ATTEN 30dB
RL 20.0dBm
10dB/
MKR 11.17dBm
6.87485GHz
MKR
6.87485 GHz
11.17 dBm
F10
23.4°C
STEP 1
TD 4.2.1
S/0538546
11-1748
CENTER 6.87485GHz
SPAN 20.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms

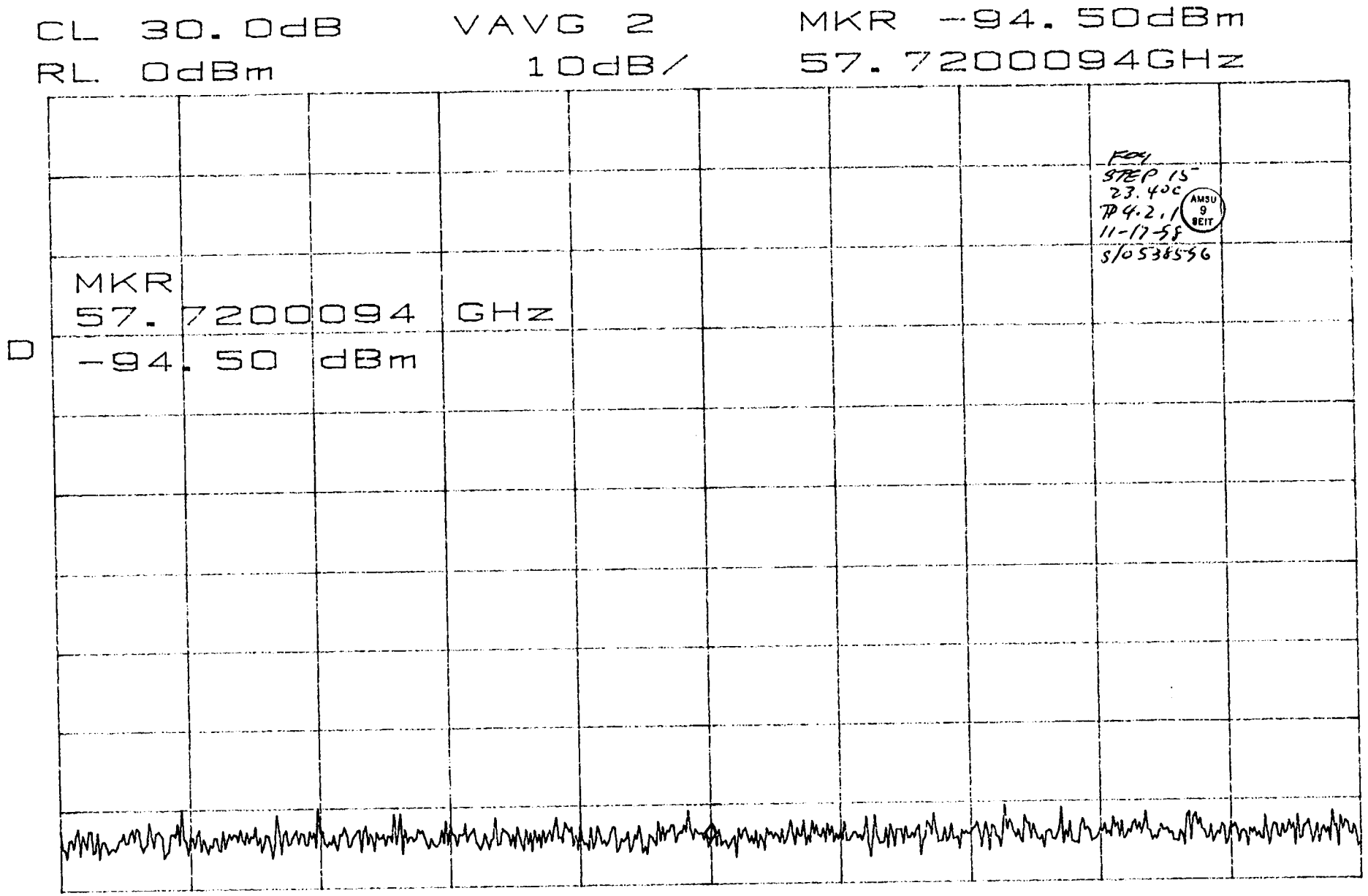

CL 30.0dB
VAVG 10
MKR -93.50dBm
RL 0dBm
10dB/
56.8606544GHz
MKR
56.8606544 GHz
-93.50 dBm
D
FCC
STEP 15
23.4°C
AP 4-2.
11-12-96
S/O 5385-96
AMSU
9
3611
CENTER 56.8606544GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

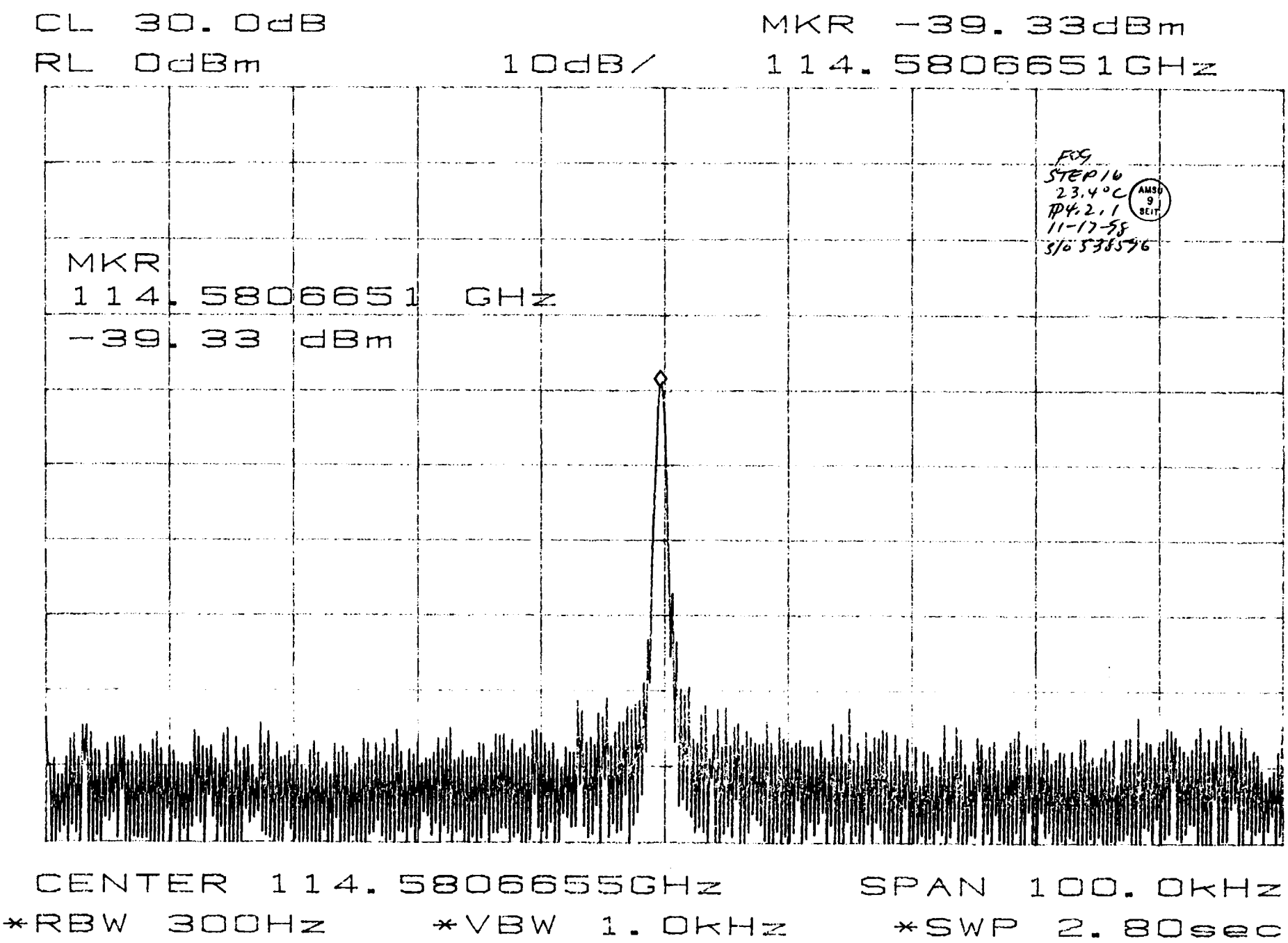

CL 30.0dB
VAVG 1
MKR -92.00dBm
RL 0dBm
10dB/
57.0038803GHz
EOG
STEP 15
23.40C
11-17-98
S/O 536556
MKR
57.0038803 GHz
D
-92.00 dBm
CENTER 57.0038803GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 1
MKR -91.00dBm
RL 0dBm
10dB/
57.1471061GHz
FOG
STEP 15
23.4°C
TP4-2.1
11-17-98
S/O 538596
AMSU
9
BEIT
MKR
57.1471061 GHz
-91.00 dBm
D
CENTER 57.1471061GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 0
MKR -92.50dBm
RL 0dBm
10dB/
57.4335577GHz
Fcq
STEP 15
23.4°C
TP 4.2.1
S/0538556
11-17-58
AMSU
9
SEIT
MKR
57.4335577 GHz
-92.50 dBm
D
CENTER 57.4335577GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 3
MKR -93.83dBm
RL 0dBm
10dB/
57.5767836GHz
FOY
STEP 15°
23.4°C
TP 4.2.1
11-17-98
5T0538596
AMSU
9
BEIT
MKR
57.5767836 GHz
-93.83 dBm
D
CENTER 57.5767836GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

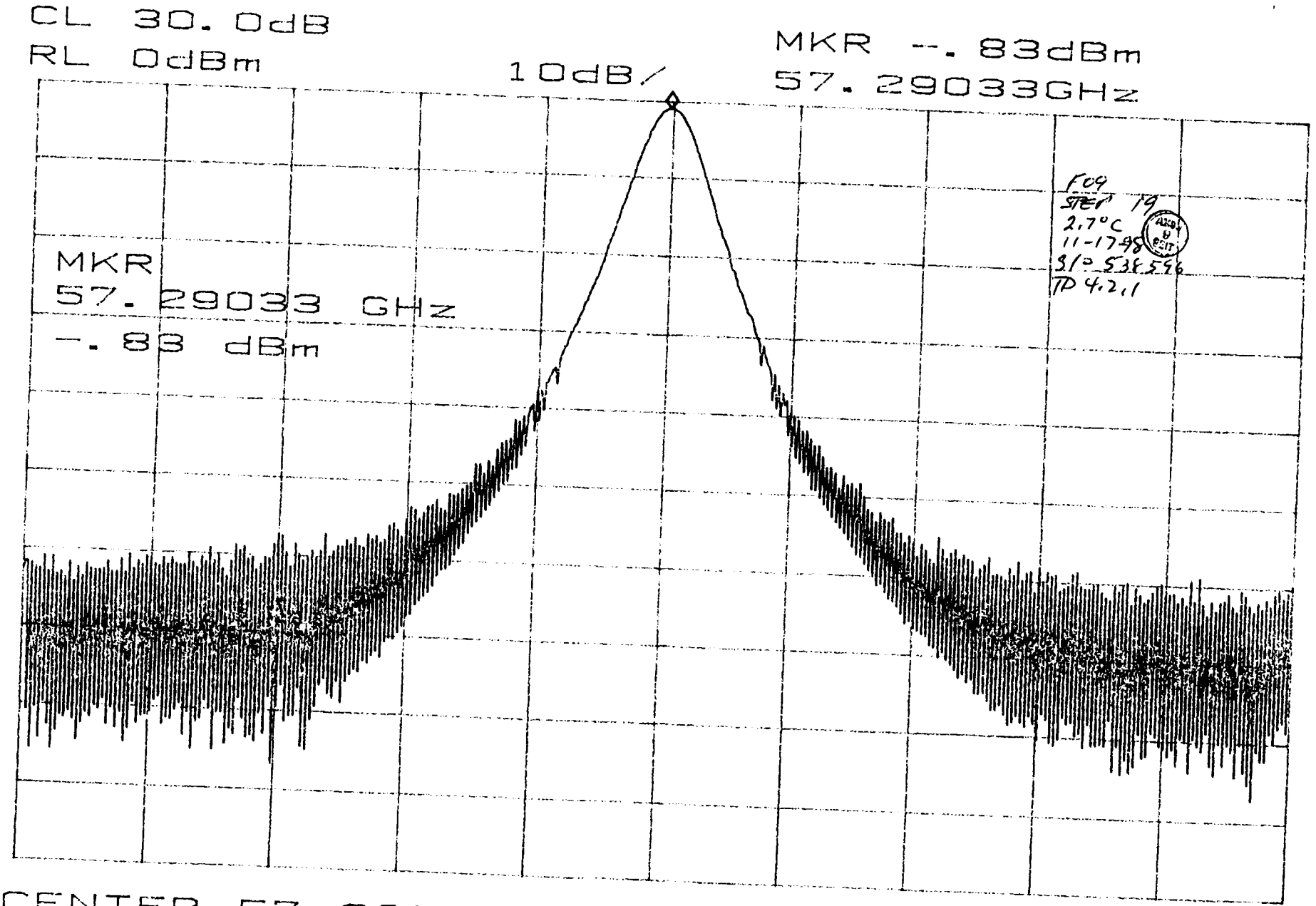

CL 30.0dB
VAVG 2
MKR -94.50dBm
RL 0dBm
10dB/
57.7200094GHz
MKR
57.7200094 GHz
-94.50 dBm
D
CENTER 57.7200094GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

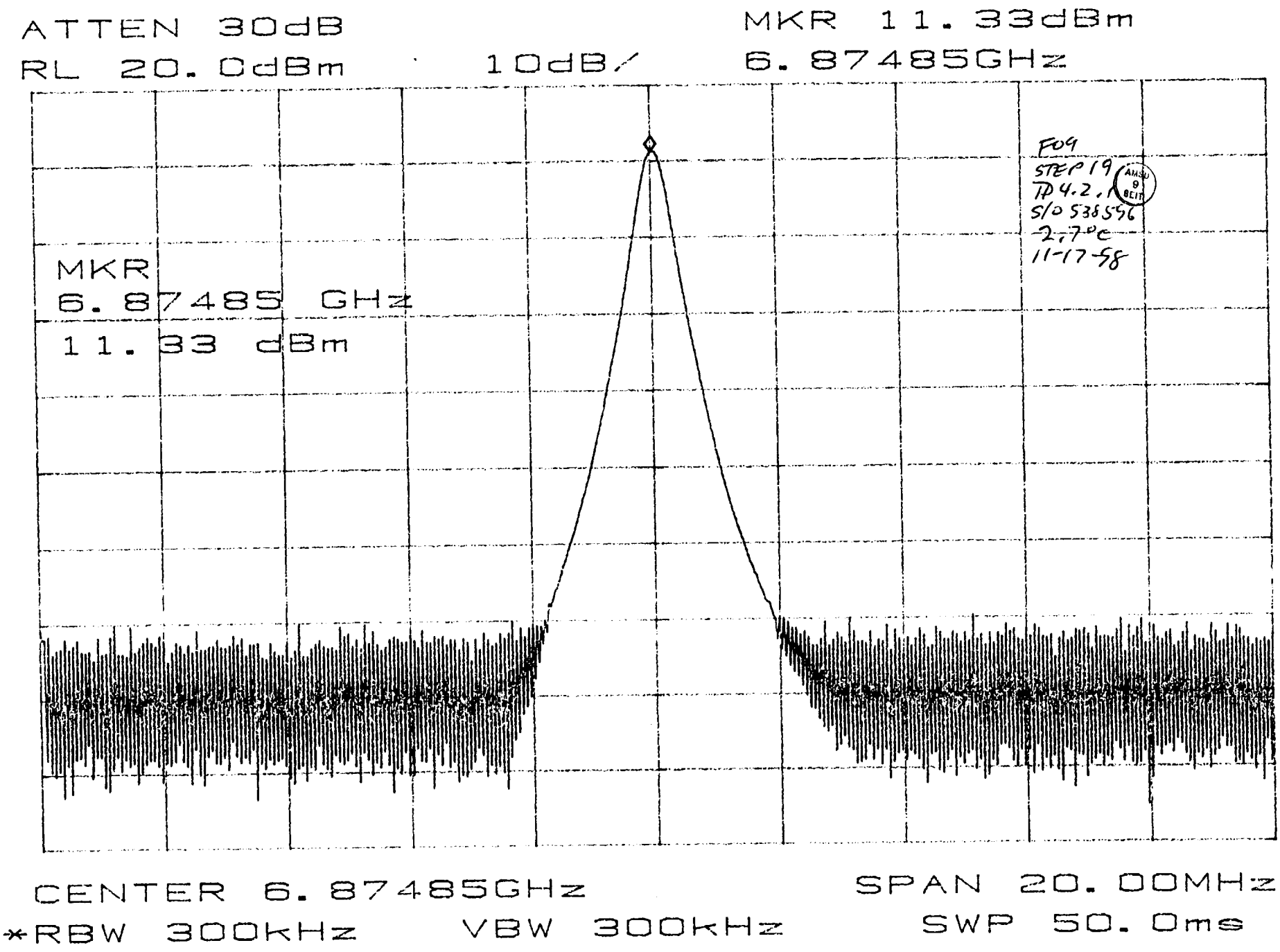

CL 30.0dB
MKR -39.33dBm
RL 0dBm
10dB/
114.5806651GHz
FCC
STEP 16
23.4°C
AMSC
9
BEIT
MP4.2.1
11-17-98
S/C 538596
MKR
114.5806651 GHz
-39.33 dBm
CENTER 114.5806655GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

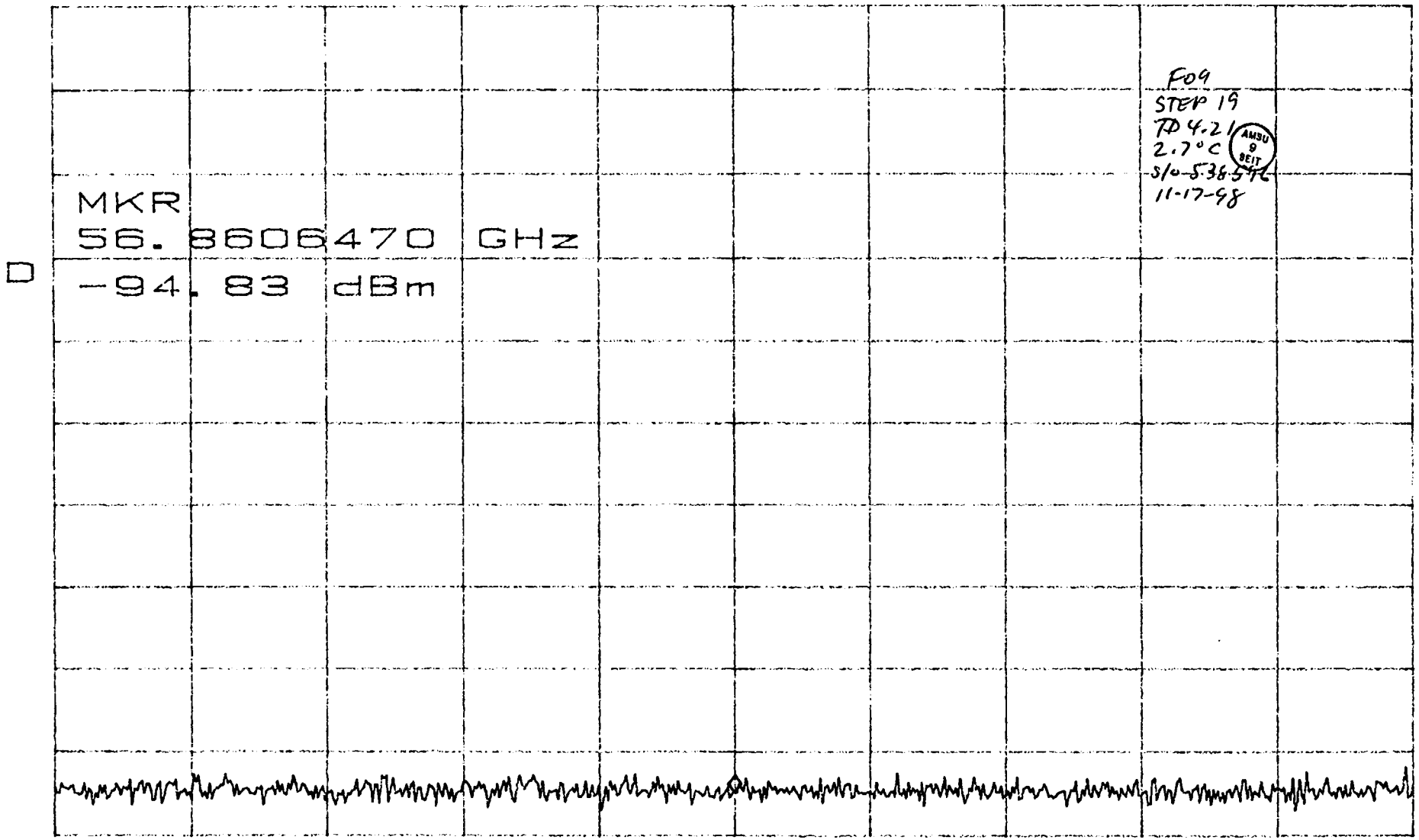
TEST DATA SHEET 6C (Sheet 2 of 4)
Functional Testing (Paragraph 4.2.1)
Post-Thermal Cycling CPT

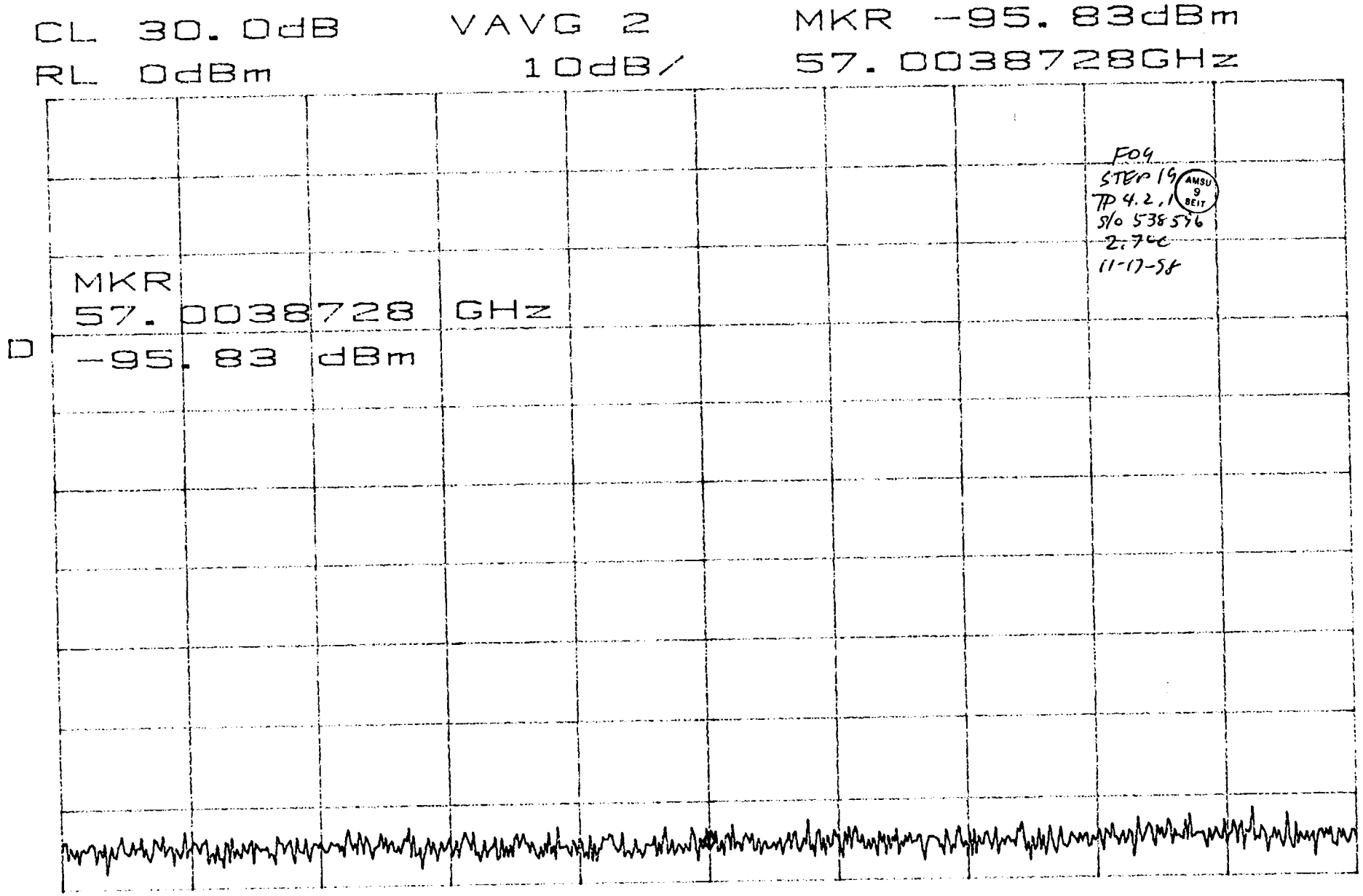
Paragraph 4.2.1.3 (Cont):

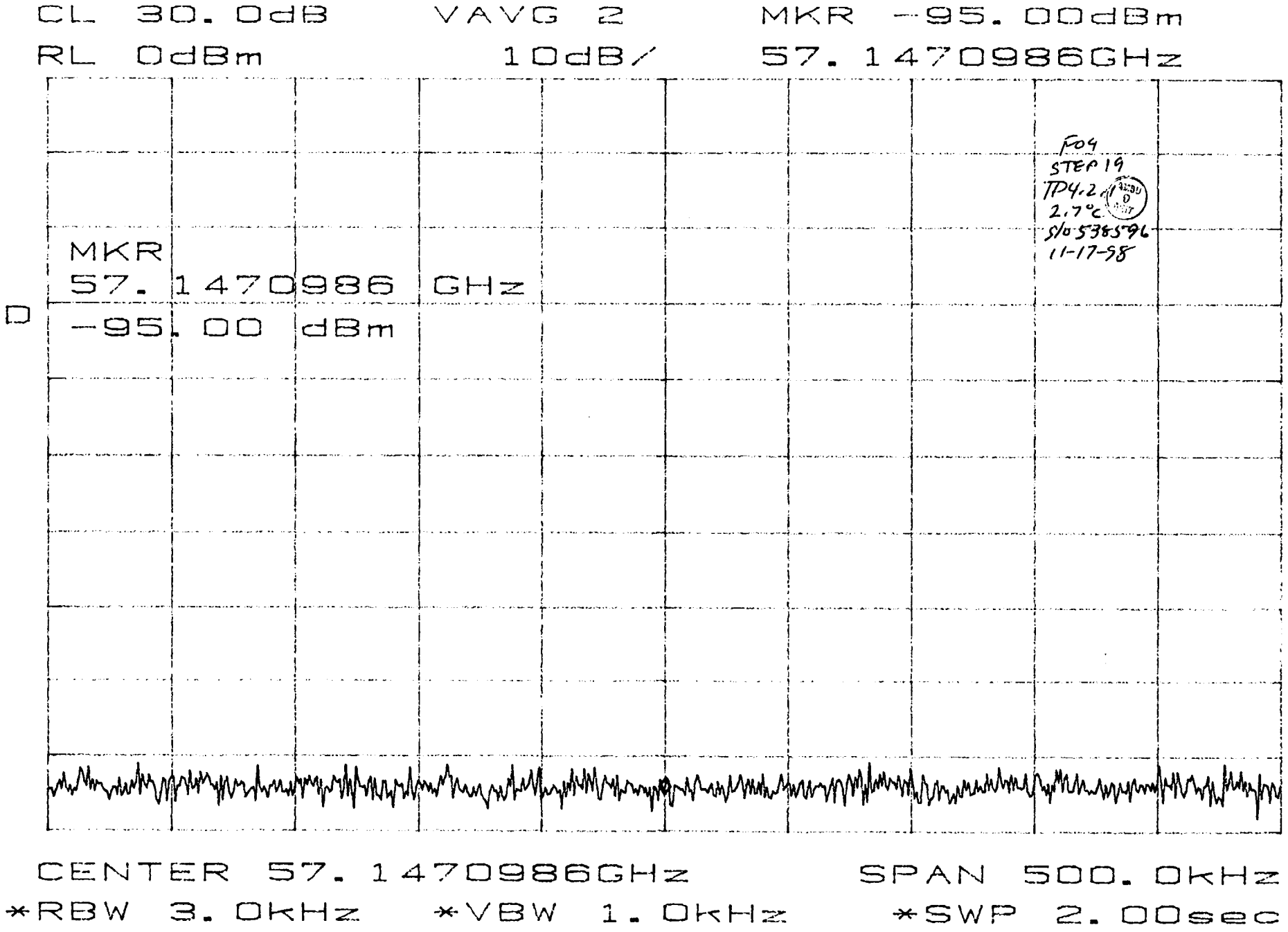
Step	Test	Expected	Measured	Pass/ Fail
13	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	Pass
		-15.2 ± 0.05 V	-Voltage = -15.2 V	"
		57.290344 ± .0002 GHz	Freq. = 57.290332214 GHz	
		17 to 20 dBm	P = 18.15 dBm	
14	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.290332156 GHz	
		17 to 20 dBm	P = 18.18 dBm	
15	Spurious and Sub	-200 to -90 dBc	see plots	"
16	Power level of 114.58 GHz signal	<-10 dBm	-35.33 dBm	Pass
17	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 7 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 1.0 dB Peak	N/A
18	Operating Temperature @ 1°C baseplate	TC1 = 1 ±2°C	TC1 = 2.7°C	Pass
			TC2 = 2.3°C	N/A
			TC3 = 1.9°C	N/A
		0 - 1V	DRO L/A = 71.8mV	Pass
		S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.53 V	Pass
19	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 508 mA	
	IM2 Current	100 mA max.	IM2 = 62 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 71.8mV	
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.53V	
	RF Output Power	17 to 20 dBm	Power = 19.09 dBm	
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290324348 GHz	Pass

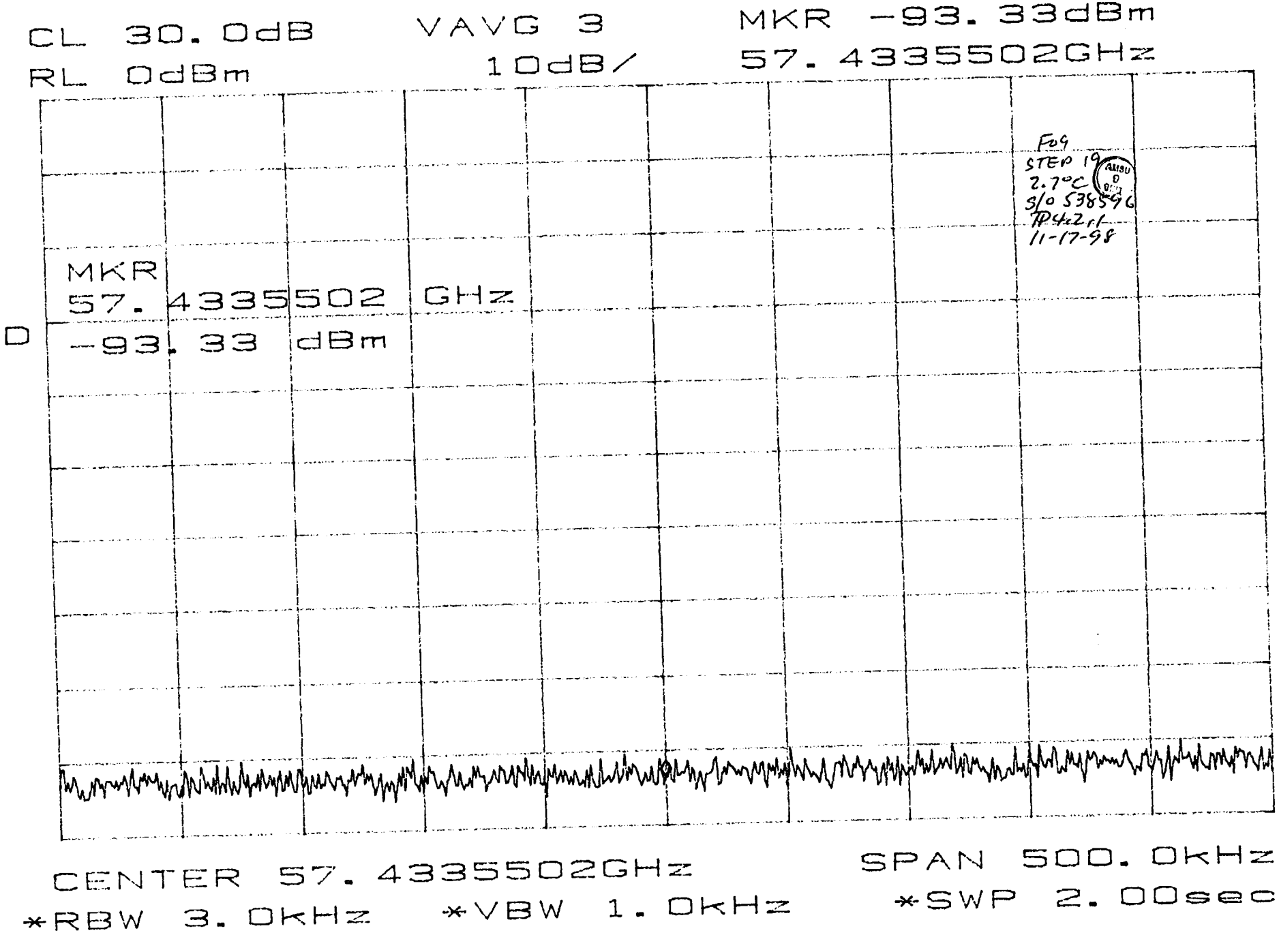

CL 30.0dB
RL 0dBm
10dB/
MKR --.83dBm
57.29033GHz
MKR
57.29033 GHz
--.83 dBm
F09
STEP 19
2.7°C
11-17-98
31°538.596
TP 4.2.1
CENTER 57.29034GHz
*RBW 300kHz
*VBW 300kHz
SPAN 10.00MHz
*SWP 50.0ms

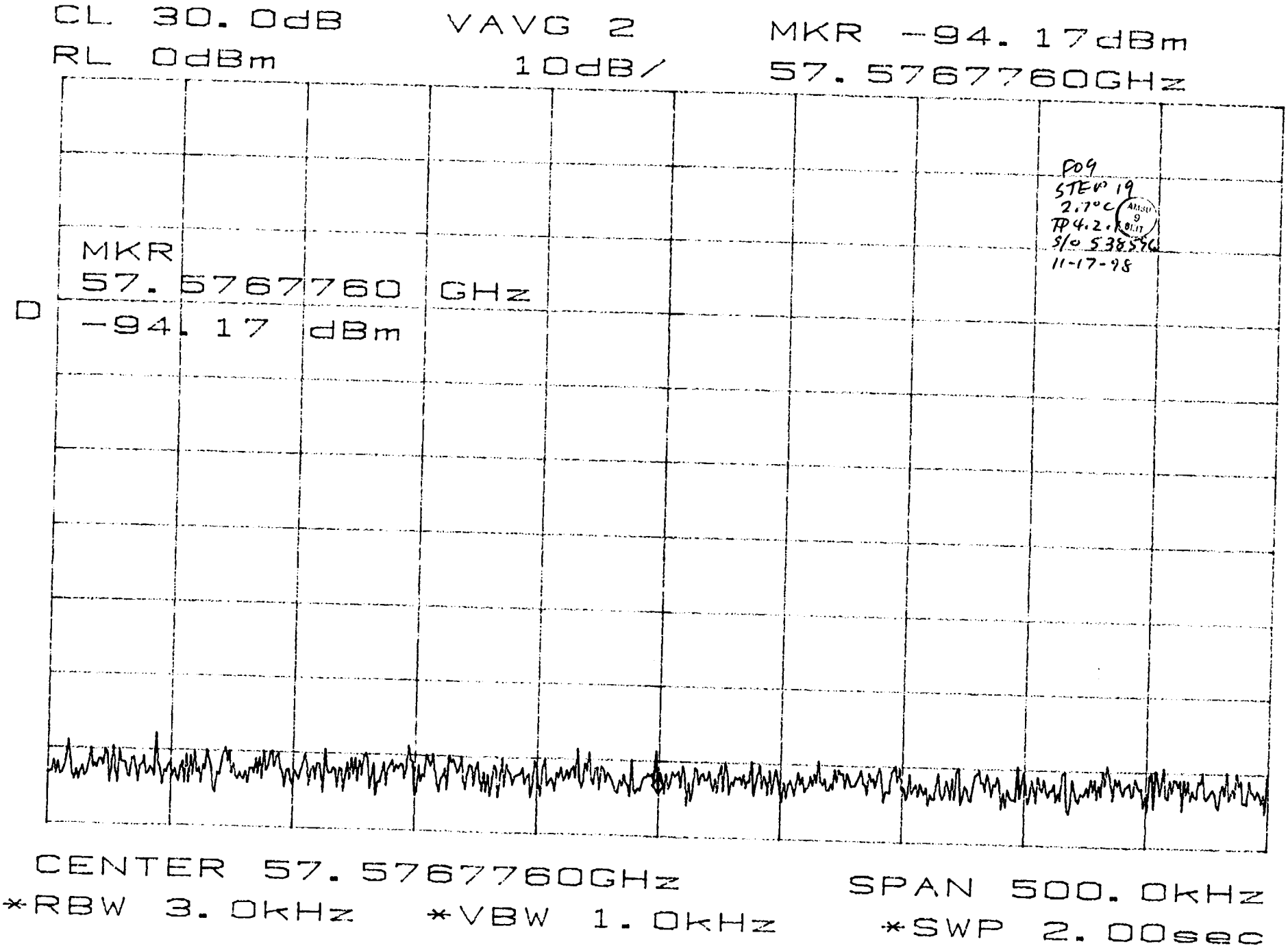

ATTEN 30dB
RL 20.0dBm
10dB/
MKR 11.33dBm
6.87485GHz
MKR
6.87485 GHz
11.33 dBm
FOG
STEP 19
TP 4.2.1
S/O 538556
2,7°C
11-17-98
CENTER 6.87485GHz
SPAN 20.00MHz
*RBW 300kHz
VBW 300kHz
SWP 50.0ms

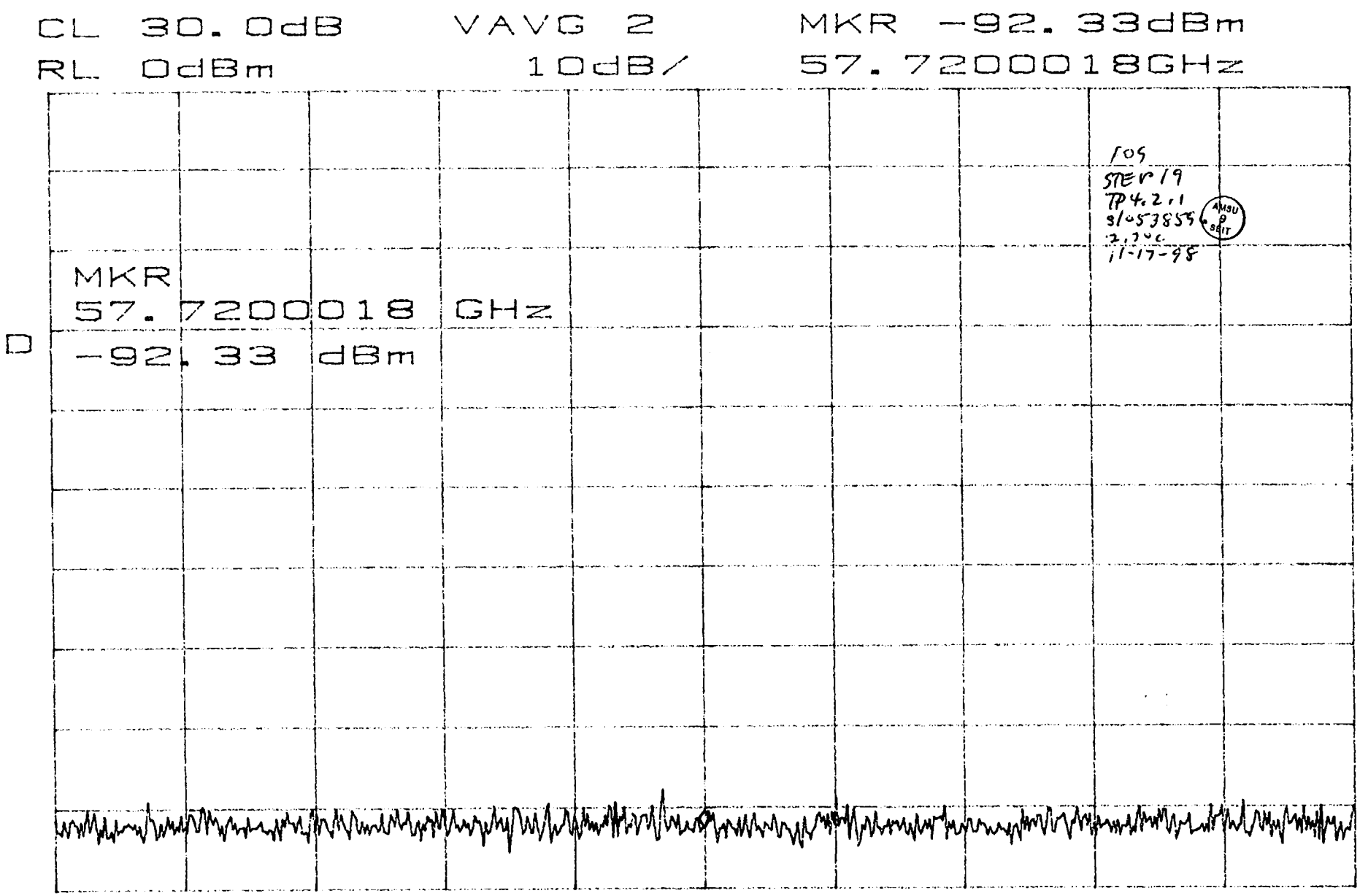

CL 30.0dB
VAVG 3
MKR -94.83dBm
RL 0dBm
10dB/
56.8606470GHz
F09
STEP 19
TP 4.21
2.7°C
S/0-5.38.5
11-17-98
AMSU
9
BEIT
MKR
56.8606470 GHz
-94.83 dBm
D
CENTER 56.8606470GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

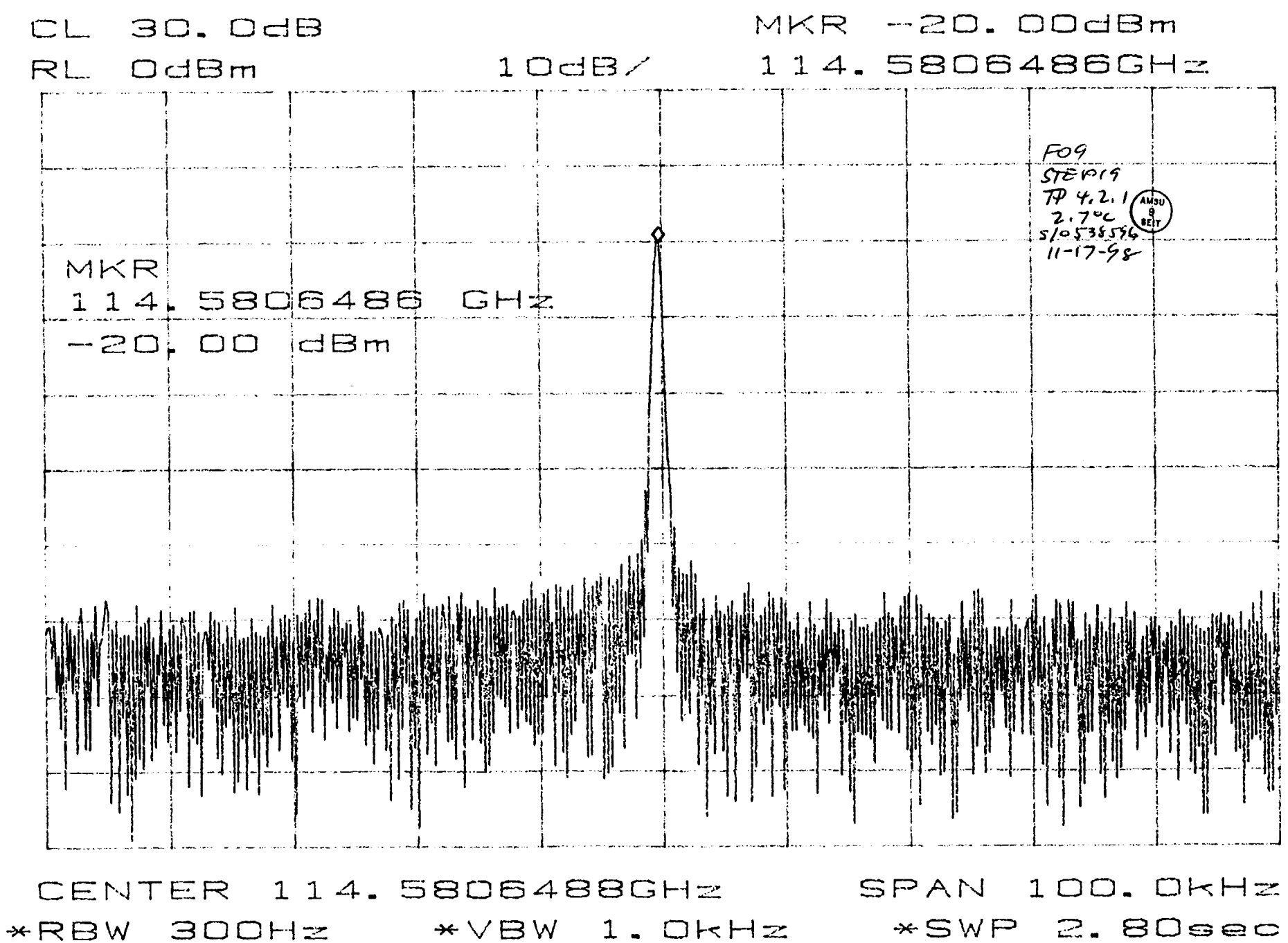

CL 30.0dB
VAVG 2
MKR -95.83dBm
RL 0dBm
10dB/
57.0038728GHz
FOR
STEP 19
TP 4.2.1
S/O 538576
2.7cc
11-17-88
AMSU
9
BEIT
MKR
57.0038728 GHz
-95.83 dBm
D
CENTER 57.0038728GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -95.00dBm
RL 0dBm
10dB/
57.1470986GHz
F04
STEP 19
TP4.2
2.7°C
S/0 5385796
11-17-98
MKR
57.1470986 GHz
-95.00 dBm
D
CENTER 57.1470986GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 3
MKR -93.33dBm
RL 0dBm
10dB/
57.4335502GHz
Fog
STEP 19
2.7°C
S/O 538596
TP4c2rf
11-17-98
MKR
57.4335502 GHz
D
-93.33 dBm
CENTER 57.4335502GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -94.17dBm
RL 0dBm
10dB/
57.5767760GHz
MKR
57.5767760 GHz
-94.17 dBm
D09
STEP 19
2.7°C
TP 4.2.kelt
S/O 538556
11-17-98
CENTER 57.5767760GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -92.33dBm
RL 0dBm
10dB/
57.7200018GHz
FOS
STEP 19
TP4.2.1
S/N53855
Z.J.V.C.
11-17-98
AMSU
B
SBIT
MKR
57.7200018 GHz
-92.33 dBm
D
CENTER 57.7200018GHz
SPAN 500.0kHz
*RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

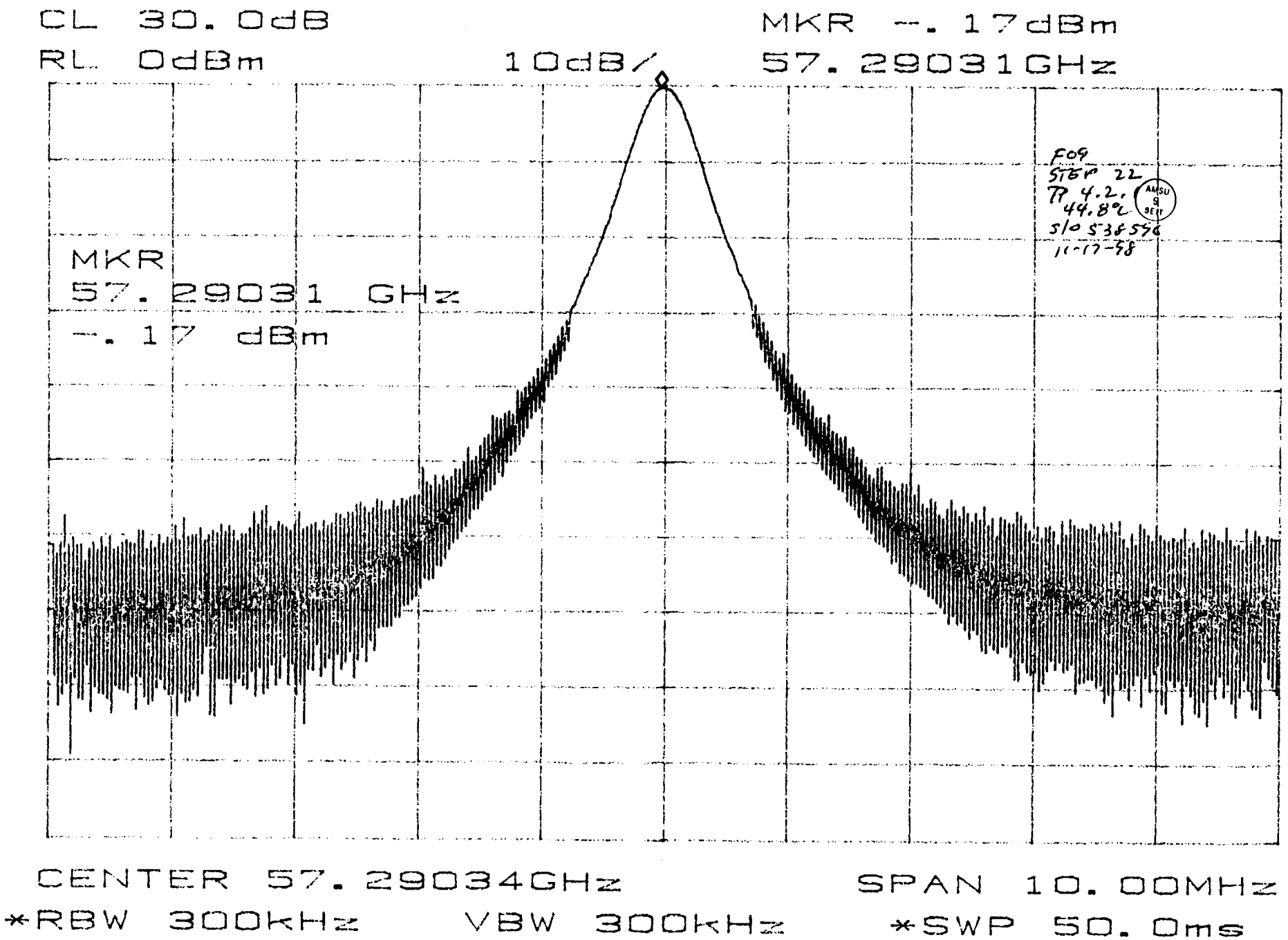

CL 30.0dB
MKR -20.00dBm
RL 0dBm
10dB/
114.5806486GHz
FO9
STEP19
TP 4.2.1
2.7°C
S/O 538556
11-17-98
AMSU B BELT
MKR
114.5806486 GHz
-20.00 dBm
CENTER 114.5806488GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

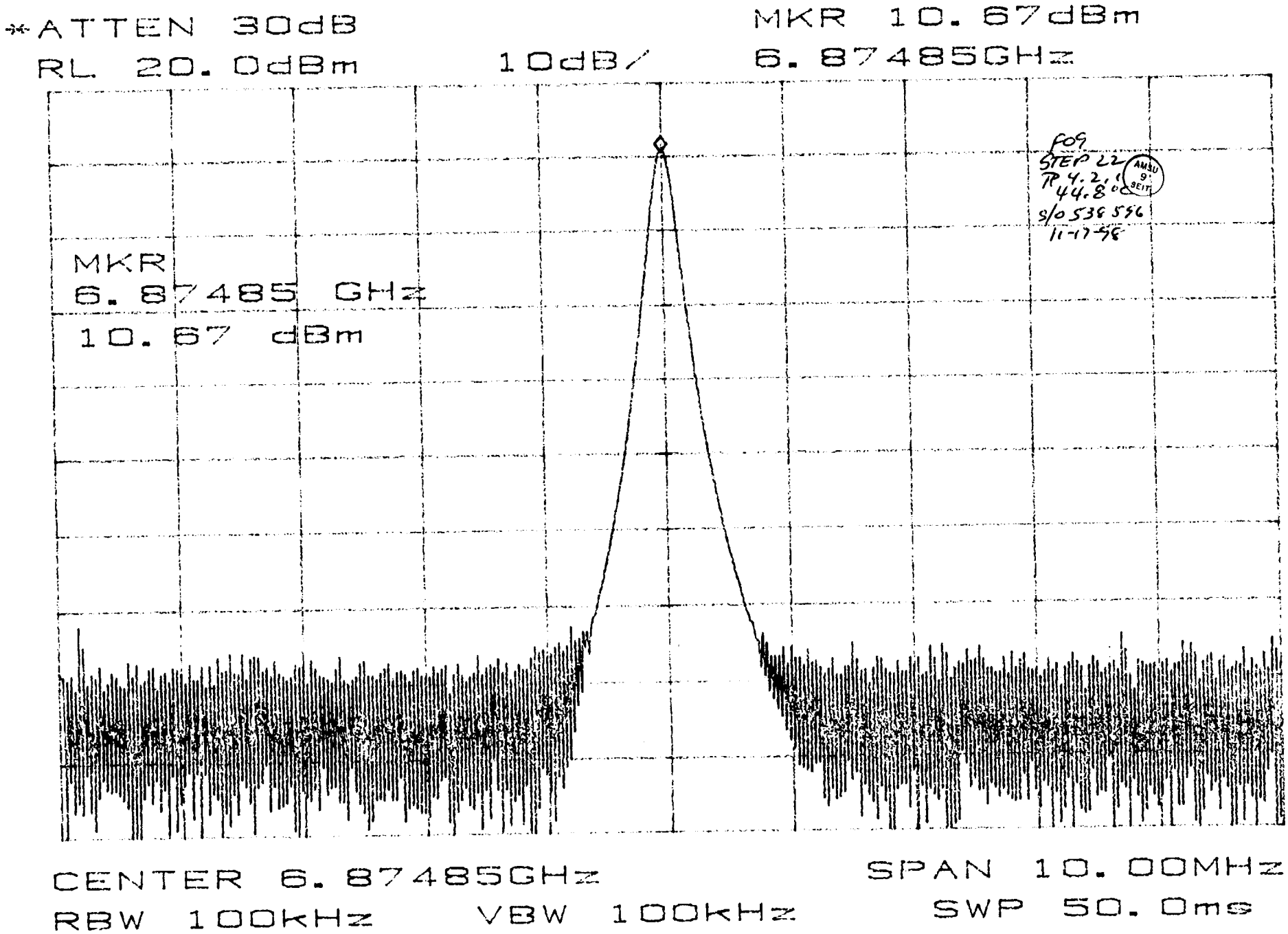
TEST DATA SHEET 6C (Sheet 3 of 4)
Functional Testing (Paragraph 4.2.1)

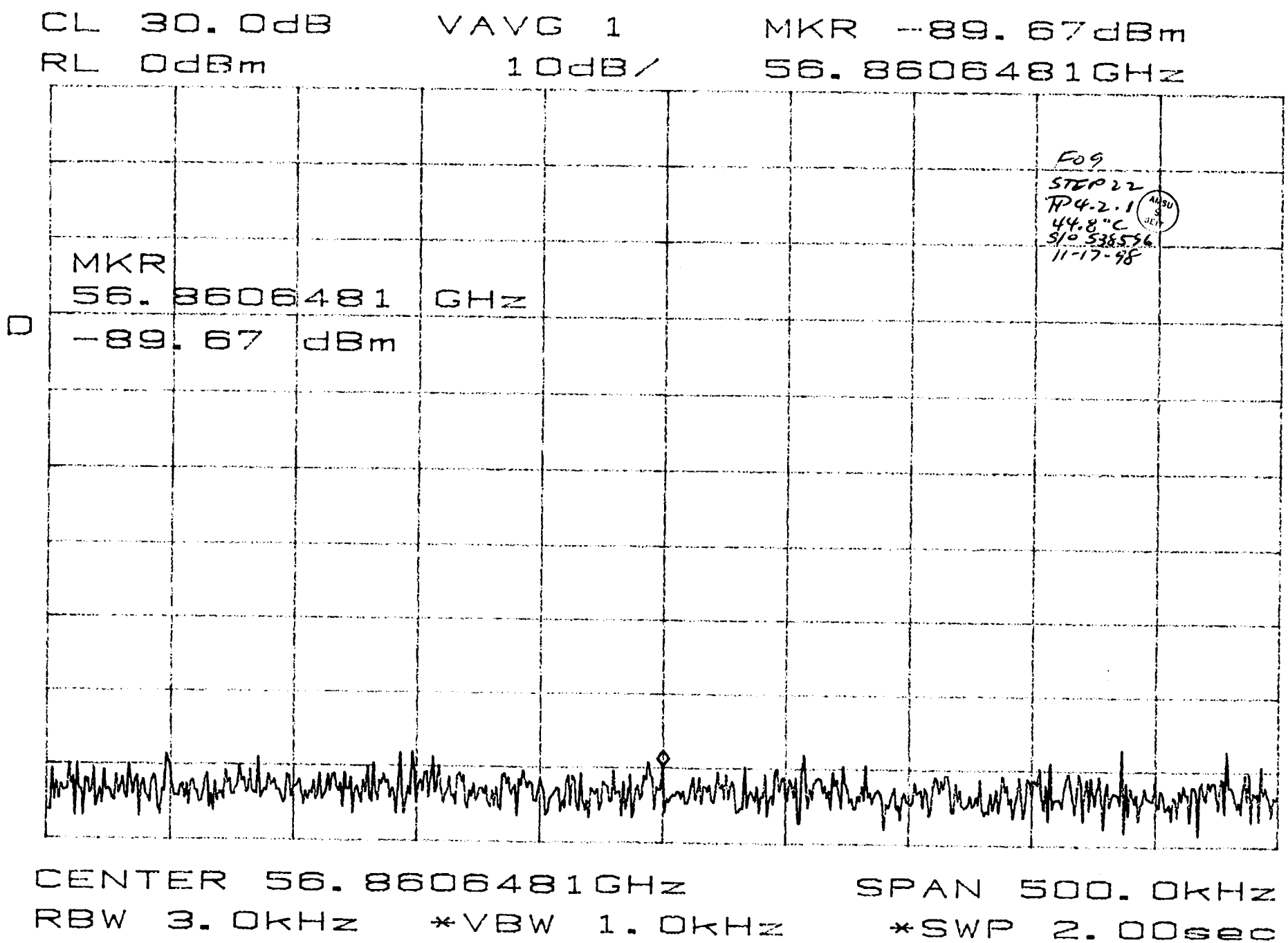
Post-Thermal Cycling CPT

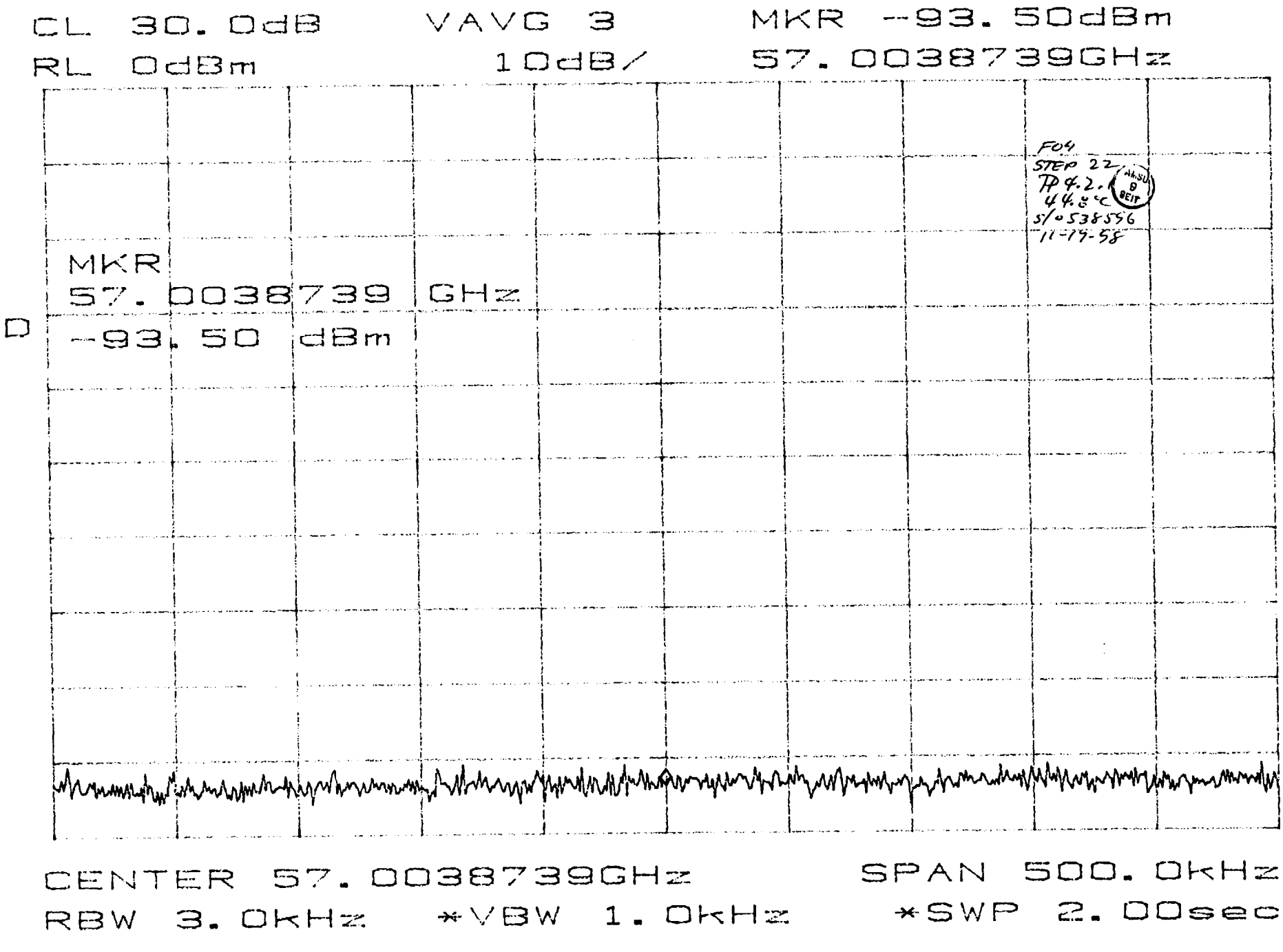
Paragraph 4.2.1.3 (Cont):

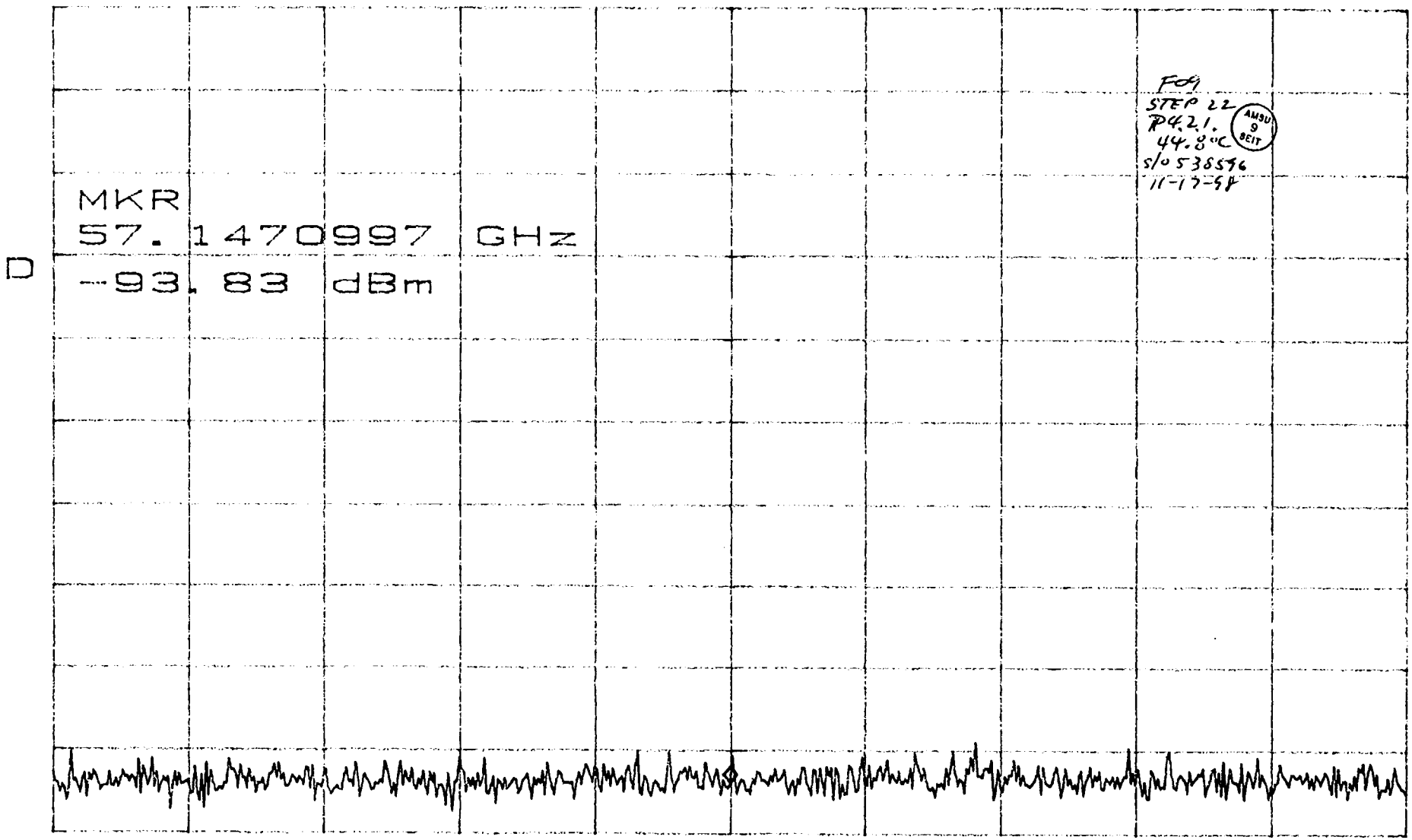
Step	Test	Expected	Measured	Pass/ Fail
19 (Cont)	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = +15.2 V	Pass
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290324394 GHz	
		17 to 20 dBm	Power = 18.82 dBm	
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = +14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.290324236 GHz	
		17 to 20 dBm	Power = 18.62 dBm	
	Spurious and Sub	-200 to -90 dBc	See plots	
	Power level of 114.58 GHz signal	<-10 dBm	~20 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 6 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 0.7 dB	N/A
21	Operating Temperature @ +44°C Baseplate	TC1 = 44 ±2°C	TC1 = 44°C	Pass
			TC2 = 43.9°C	N/A
			TC3 = 43.8°C	N/A
		0 - 1V	DRO L/A = 1.39m V	Pass
		S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.54 V	
22	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = 15.0 V	
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	
	IM1 Current	600 mA max.	IM1 = 534 mA	
	IM2 Current	100 mA max.	IM2 = -65 mA	
	DRO L/A Voltage	0 to 1V	DRO L/A = 1.40 m V	
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.54 V	
	RF Output Power and	17 to 20 dBm	Power = 17.66 dBm	
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290 325503 GHz	Pass

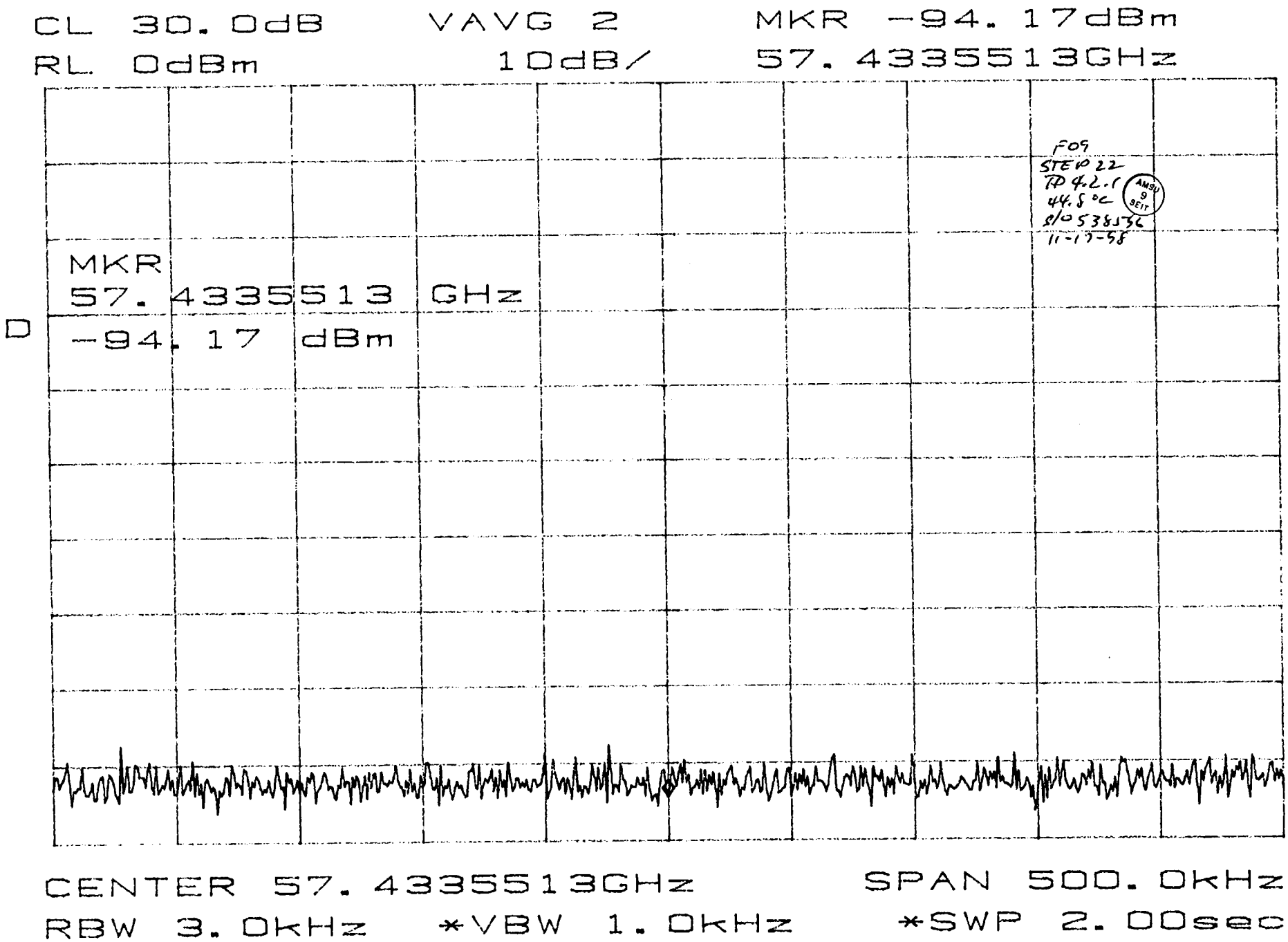

CL 30.0dB
RL 0dBm
10dB/
MKR -.17dBm
57.29031GHz
MKR
57.29031 GHz
-.17 dBm
F09
STEP 22
TP 4.2.
44.8°C
S/O 538536
11-17-98
AMSU
9
SE11
CENTER 57.29034GHz
SPAN 10.00MHz
*RBW 300kHz
VBW 300kHz
*SWP 50.0ms

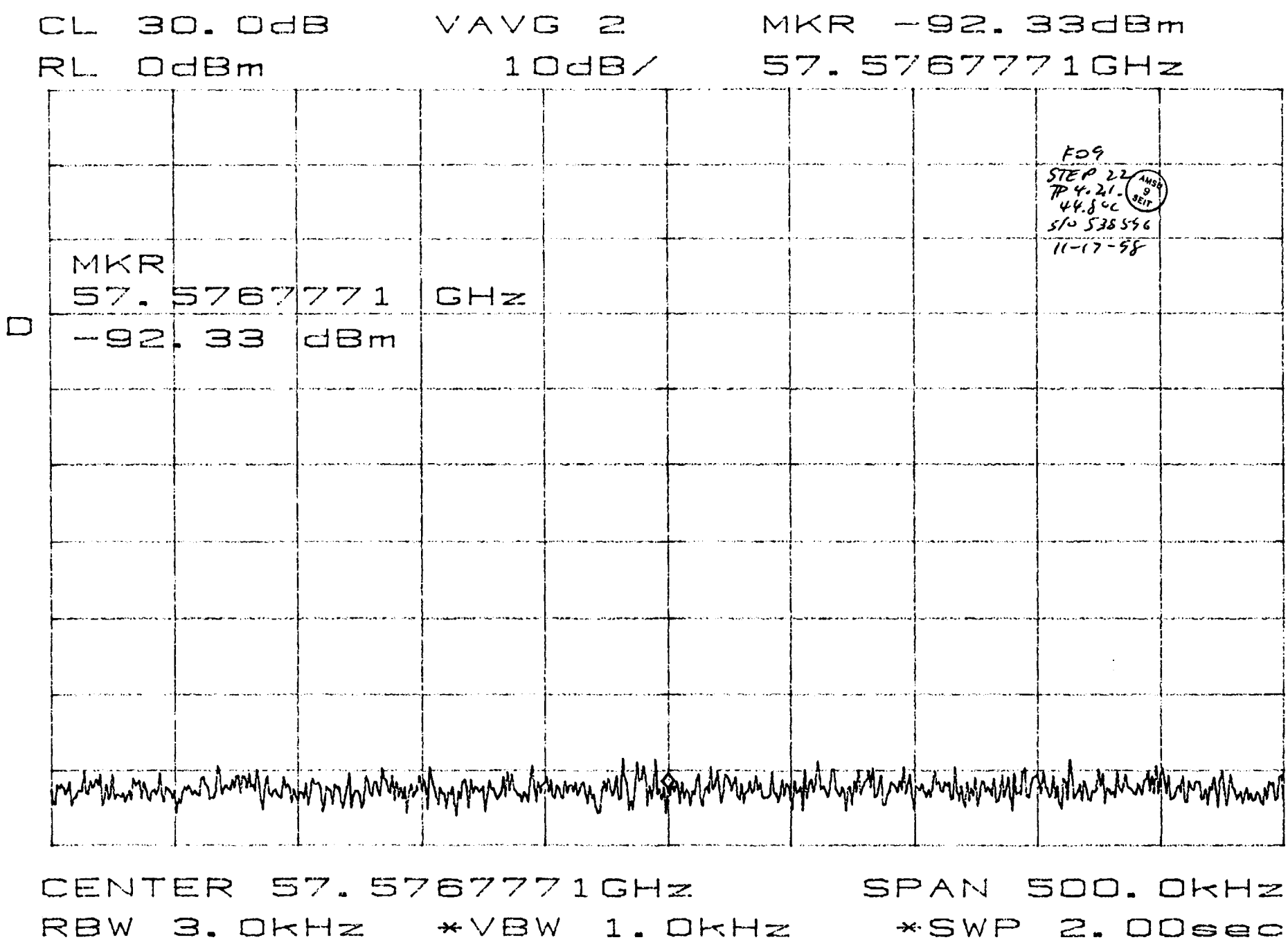

*ATTEN 30dB
RL 20.0dBm
10dB/
MKR 10.67dBm
6.87485GHz
MKR
6.87485 GHz
10.67 dBm
FCC
STEP 22
PP 4.2.1
44.8
S/O 538596
11-17-98
CENTER 6.87485GHz
SPAN 10.00MHz
RBW 100kHz
VBW 100kHz
SWP 50.0ms

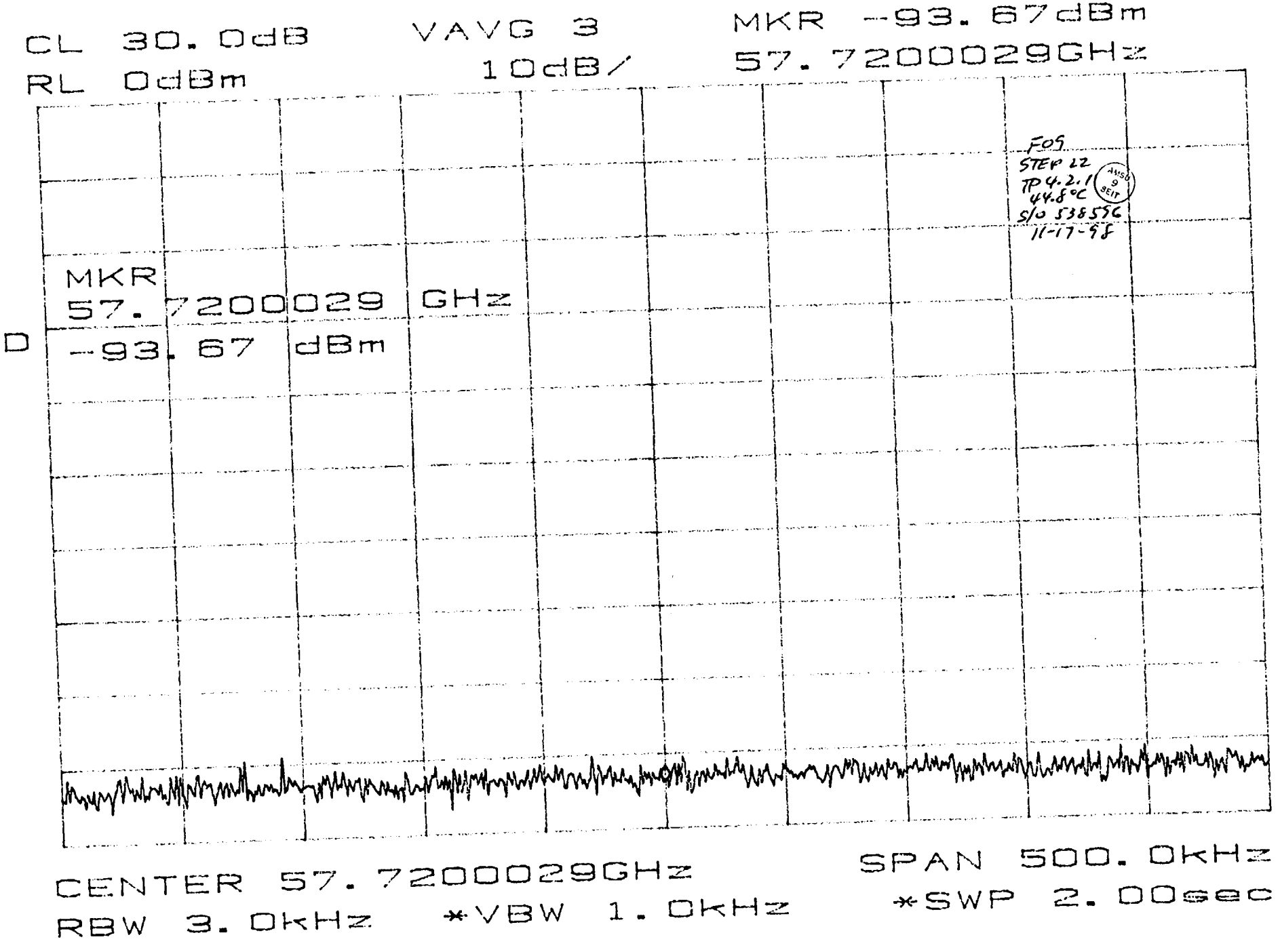

CL 30.0dB
VAVG 1
MKR -89.67dBm
RL 0dBm
10dB/
56.8606481GHz
MKR
56.8606481 GHz
-89.67 dBm
D
E09
STEP 22
TP4-2.1
44.8°C
S/O 538556
11-17-98
CENTER 56.8606481GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec

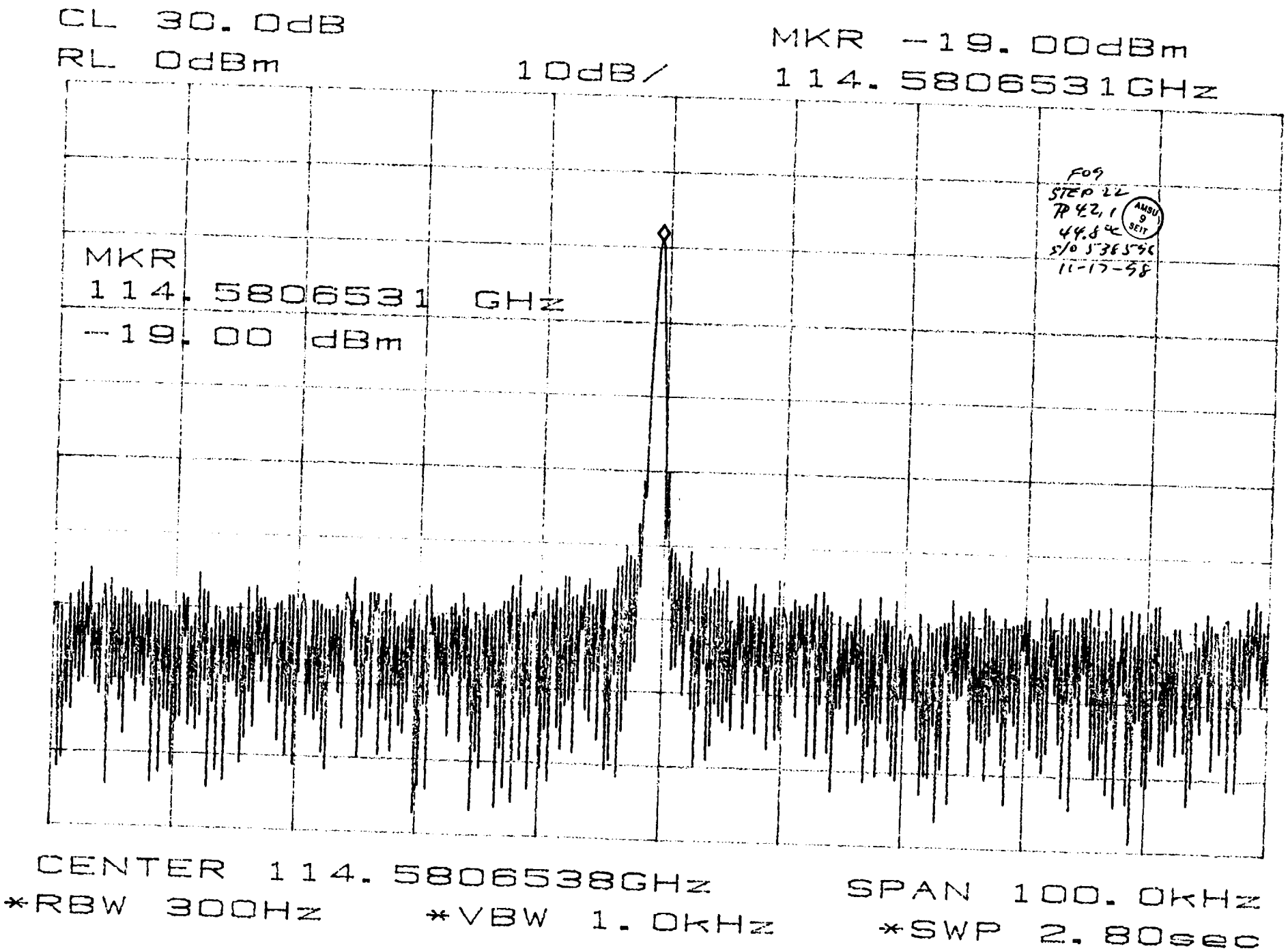

CL 30.0dB
VAVG 3
MKR -93.50dBm
RL 0dBm
10dB/
57.0038739GHz
FOR
STEP 22
TP 4.2.
44.8°C
S/0538556
11-19-58
MKR
57.0038739 GHz
-93.50 dBm
D
CENTER 57.0038739GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -93.83dBm
RL 0dBm
10dB/
57.1470997GHz
FCI
STEP 22
P421.
44.8°C
S/O 538596
11-17-94
AMSU
&
BEIT
MKR
57.1470997 GHz
-93.83 dBm
D
CENTER 57.1470997GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -94.17dBm
RL 0dBm
10dB/
57.4335513GHz
F09
STEP 22
TP 4.2.1
44.8 °C
S/O 5385756
11-17-58
AMSU 9 SEIT
MKR
57.4335513 GHz
D
-94.17 dBm
CENTER 57.4335513GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
VAVG 2
MKR -92.33dBm
RL 0dBm
10dB/
57.5767771GHz
FCC
STEP 22
TP 4.21-44.8cc
S/O 538556
11-17-98
MKR
57.5767771 GHz
-92.33 dBm
D
CENTER 57.5767771GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
RL 0dBm
VAVG 3
10dB/
MKR -93.67dBm
57.7200029GHz
FOS
STEP 22
TP 4.2.1
44.8°C
S/O 538556
11-17-98
AMSD
9
SEIT
MKR
57.7200029 GHz
D -93.67 dBm
CENTER 57.7200029GHz
SPAN 500.0kHz
RBW 3.0kHz
*VBW 1.0kHz
*SWP 2.00sec


CL 30.0dB
RL 0dBm
10dB/
MKR -19.00dBm
114.5806531GHz
MKR
114.5806531 GHz
-19.00 dBm
CENTER 114.5806538GHz
SPAN 100.0kHz
*RBW 300Hz
*VBW 1.0kHz
*SWP 2.80sec

TEST DATA SHEET 6C (Sheet 4 of 4)
Functional Testing (Paragraph 4.2.1)

Post-Thermal Cycling CPT

Paragraph 4.2.1.3 (Cont):

Step	Test	Expected	Measured	Pass/Fail
22 (Cont)	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = 15.2 V	Pass
		-15.2 ± 0.05 V	-Voltage = -15.2 V	
		57.290344 ± .0002 GHz	Freq. = 57.290325594 GHz	
		17 to 20 dBm	Power = 17.36 dBm	
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.8 V	
		-14.8 ± 0.05 V	-Voltage = -14.8 V	
		57.290344 ± .0002 GHz	Freq. = 57.~~47750~~ (AMSU 9) 290325594 GHz	
		17 to 20 dBm	Power = 17.58 dBm	
	Spurious and Sub	-200 to -90 dBc	see plots	
	Power level of 114.58 GHz signal	<-10 dBm	-19 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 1 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 1.0 dB	N/A

Shop Order No.: 538596

Operation: 0170

Unit Serial No.: F09

Date: 11-17-98

Test Engineer: (AMSU 9 SEIT)

Quality Control: (2668 NOV 18)

Govt. Rep.: DCMC 11/18/98

Section 5B: Final Functional Testing - F10

This section contains the results of a full functional test over temperature taken after PLO F10 endured thermal cycling. All tests passed.

TEST DATA SHEET 6C (Sheet 1 of 4)
Functional Testing (Paragraph 4.2.1)

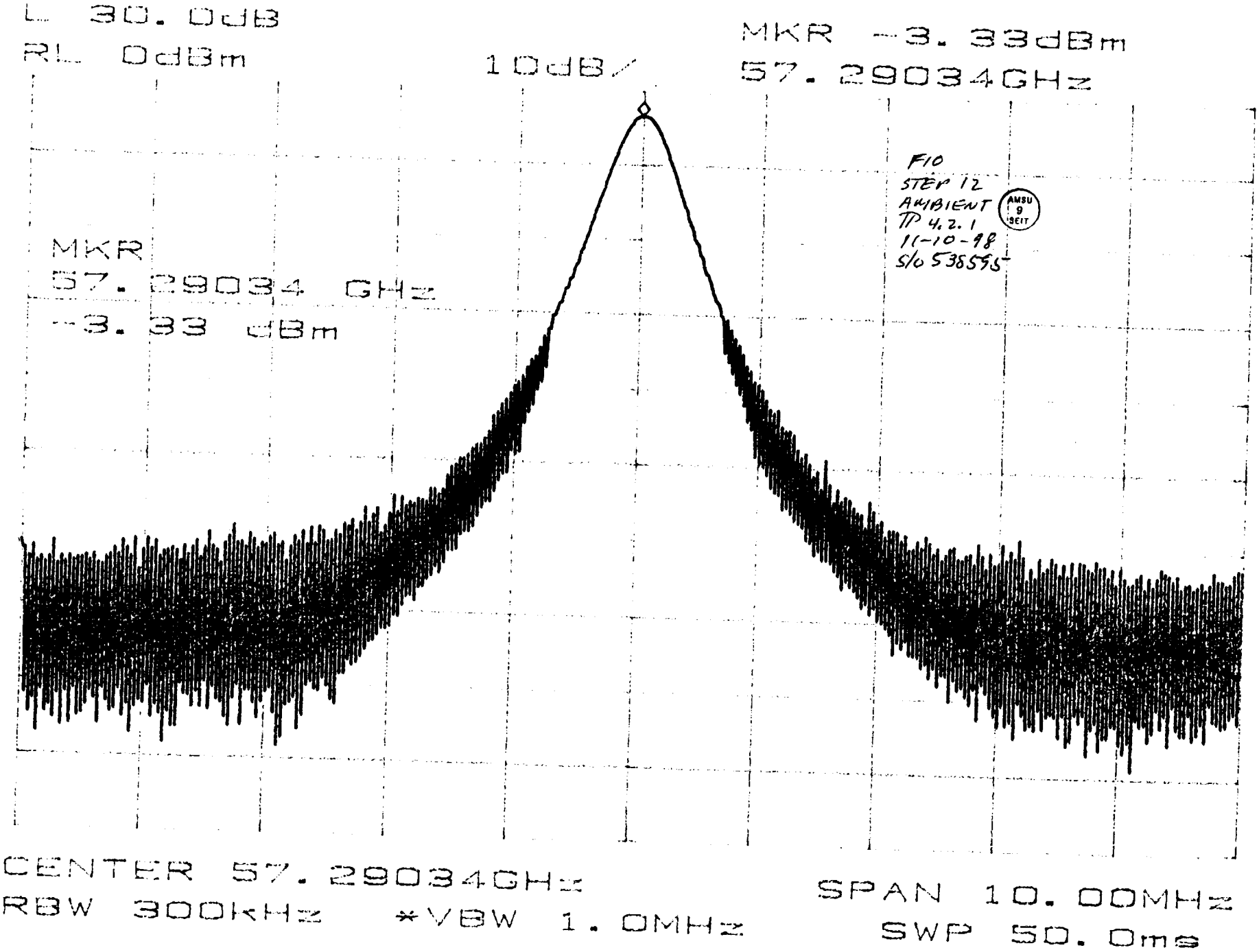
Post-Thermal Cycling CPT

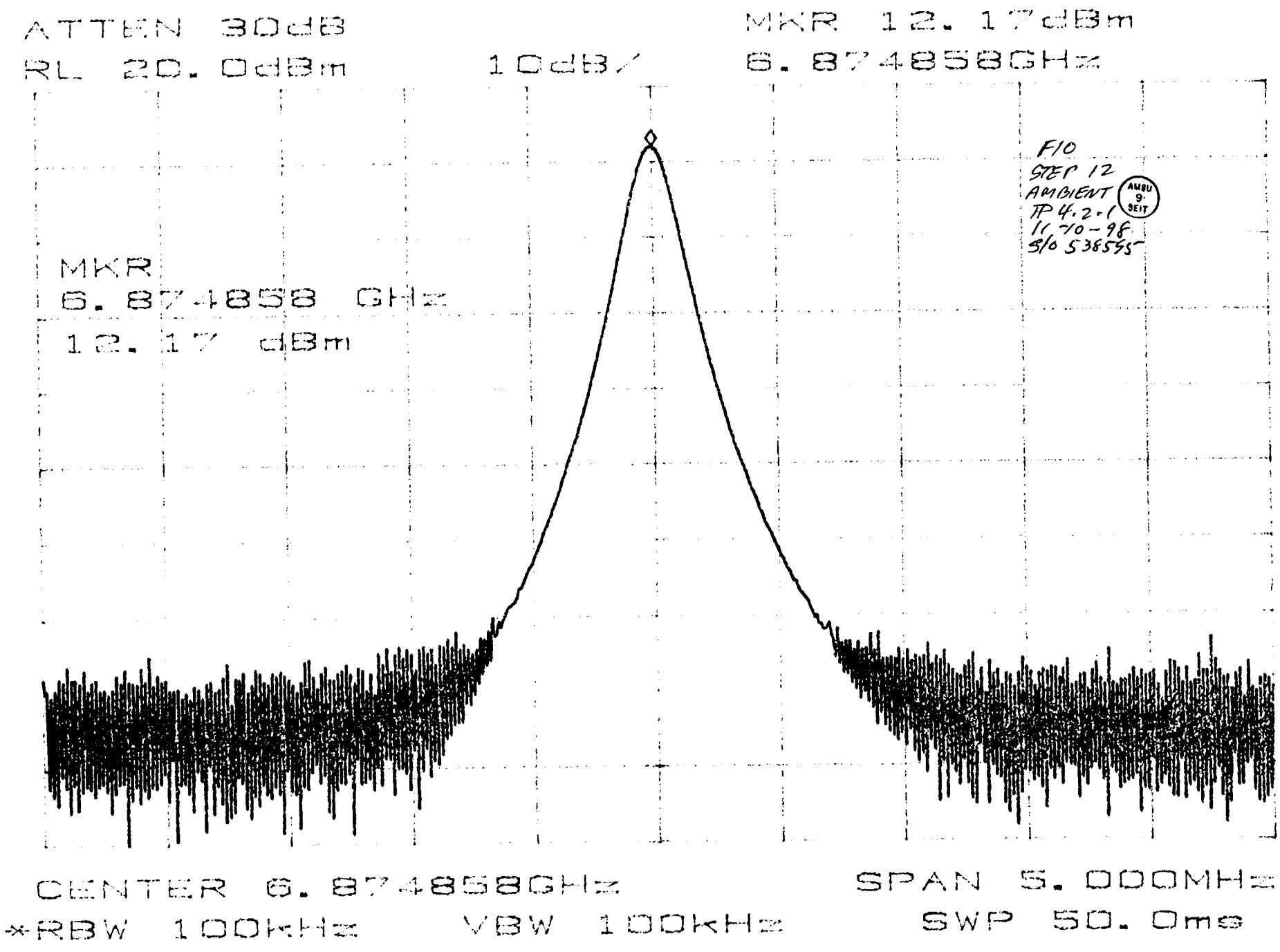
Test Setup Verified: _____ Signature

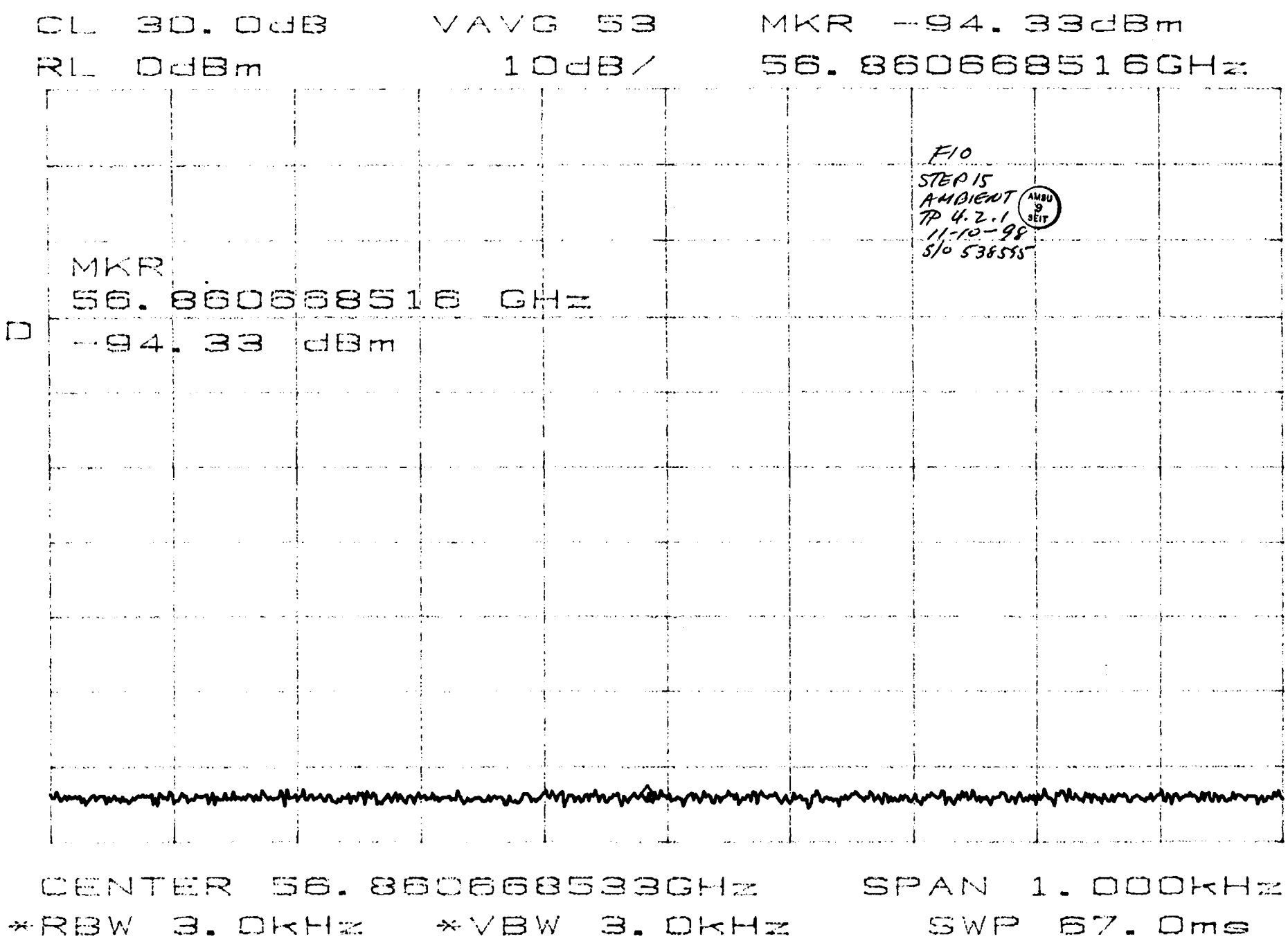
Paragraph 4.2.1.3, Functional Testing:

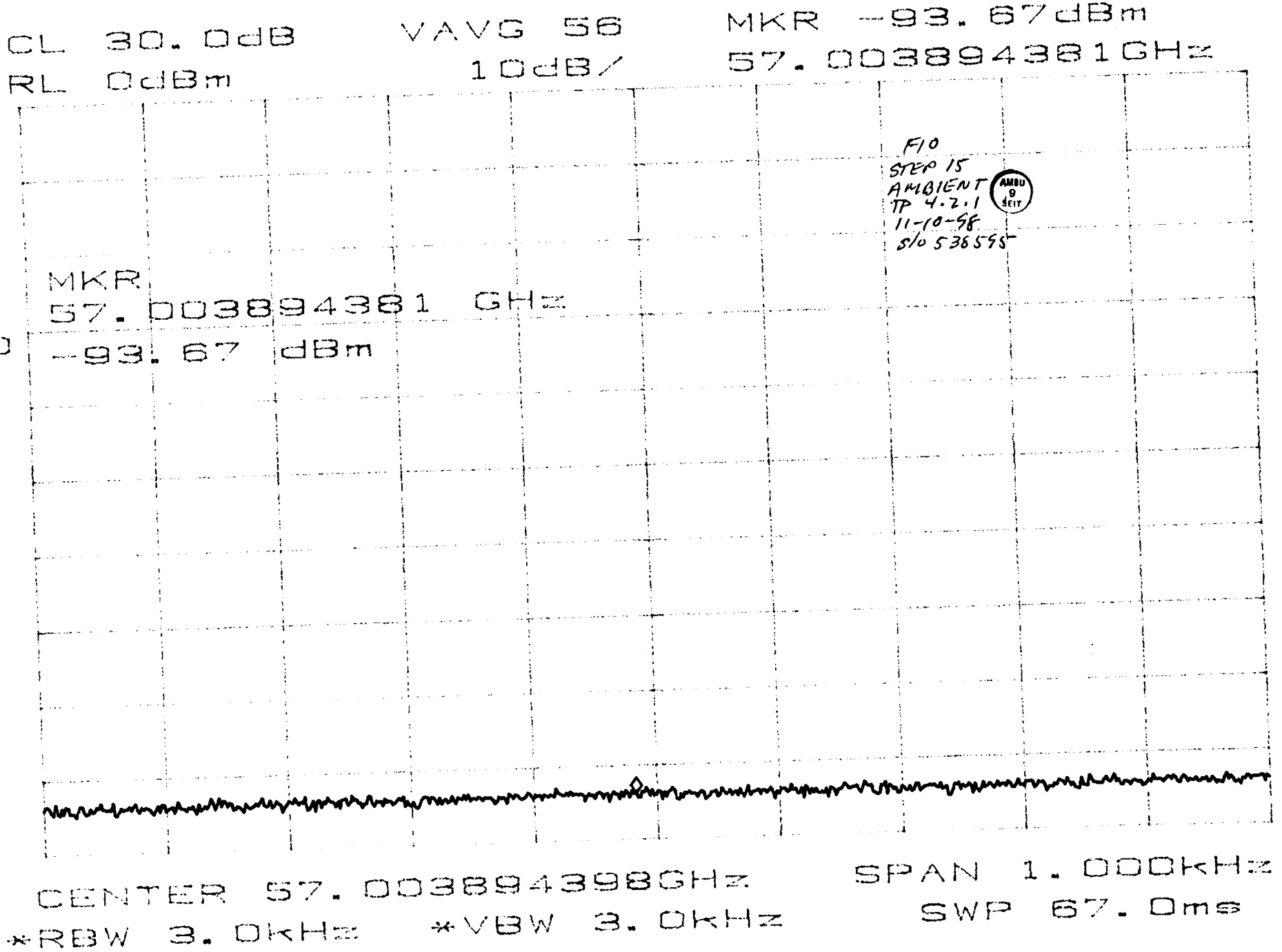
Step	Test	Expected	Measured	Pass/ Fail
1	Potential Difference from ± 15 V RTN to:			
	PLO Base Plate	< 1.0 Vac	0.01 V	Pass
	Spectrum Analyzer	< 1.0 Vac	0.02 V	Pass
	Frequency Counter Chassis	< 1.0 Vac	0.06 V	Pass
	Power Meter Chassis	< 1.0 Vac	0.02 V	Pass
4	Evacuate vacuum chamber and record pressure	$<10^{-2}$ torr	Pressure = _____ torr	*
5	Thermal couple readings	TC1 = 22 ± 2 °C	TC1 = 23.4 °C	
			TC2 = 24.0 °C	N/A
			TC3 = 22.9 °C	N/A
6	DRO L/A	0 to 1V	DRO L/A = 73m V	Pass
	PLO L/A	S/N: F06, F08 = 14.6 ± 0.4V S/N: F07 = 0 to 1V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.54 V	Pass
	Is PLO locked?	Yes	Yes ✓ No _____	Pass
7	PLO Frequency	57.290344 ± .0002 GHz	Freq. = 57.290346129 GHz	Pass
	PLO Power	17 to 20 dBm	P = 17.9 dBm	Pass
8	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.18 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.20 V	Pass
	IM1 Current	600 mA max.	IM1 = 533 mA	Pass
	IM2 Current	100 mA max.	IM2 = -70.2 mA	Pass
	DRO L/A Voltage	0 to 1V	DRO L/A = 73m V	Pass
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.54 V	Pass
12	RF Output Power and Frequency	17 to 20 dBm	P = 17.9 dBm	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290346129 GHz	Pass
	Baseplate Temp. (TC1)	TC1 = 22 ±2°C	TC1 = 23.6 °C	Pass

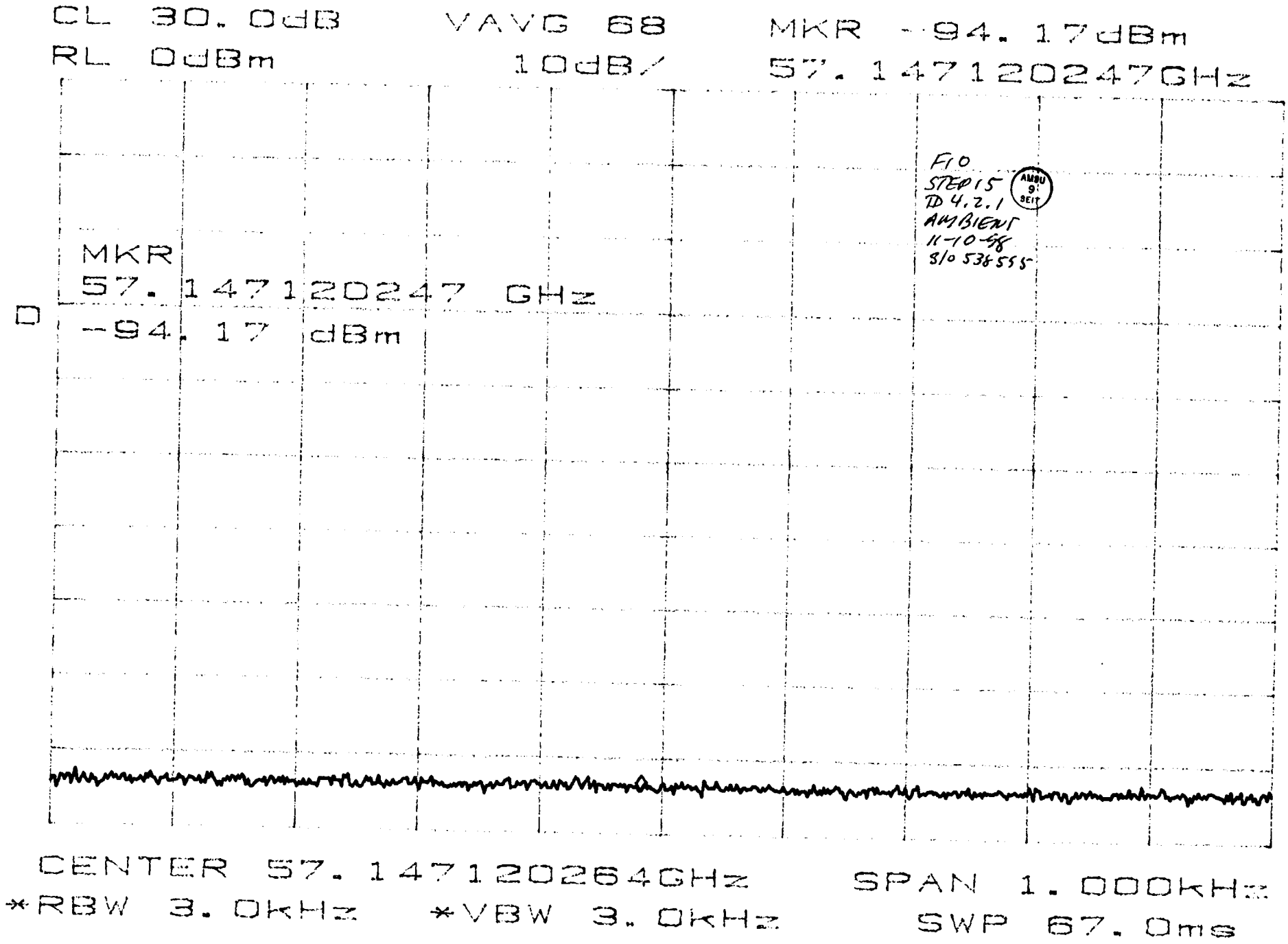
*Record data only if performing test under vacuum

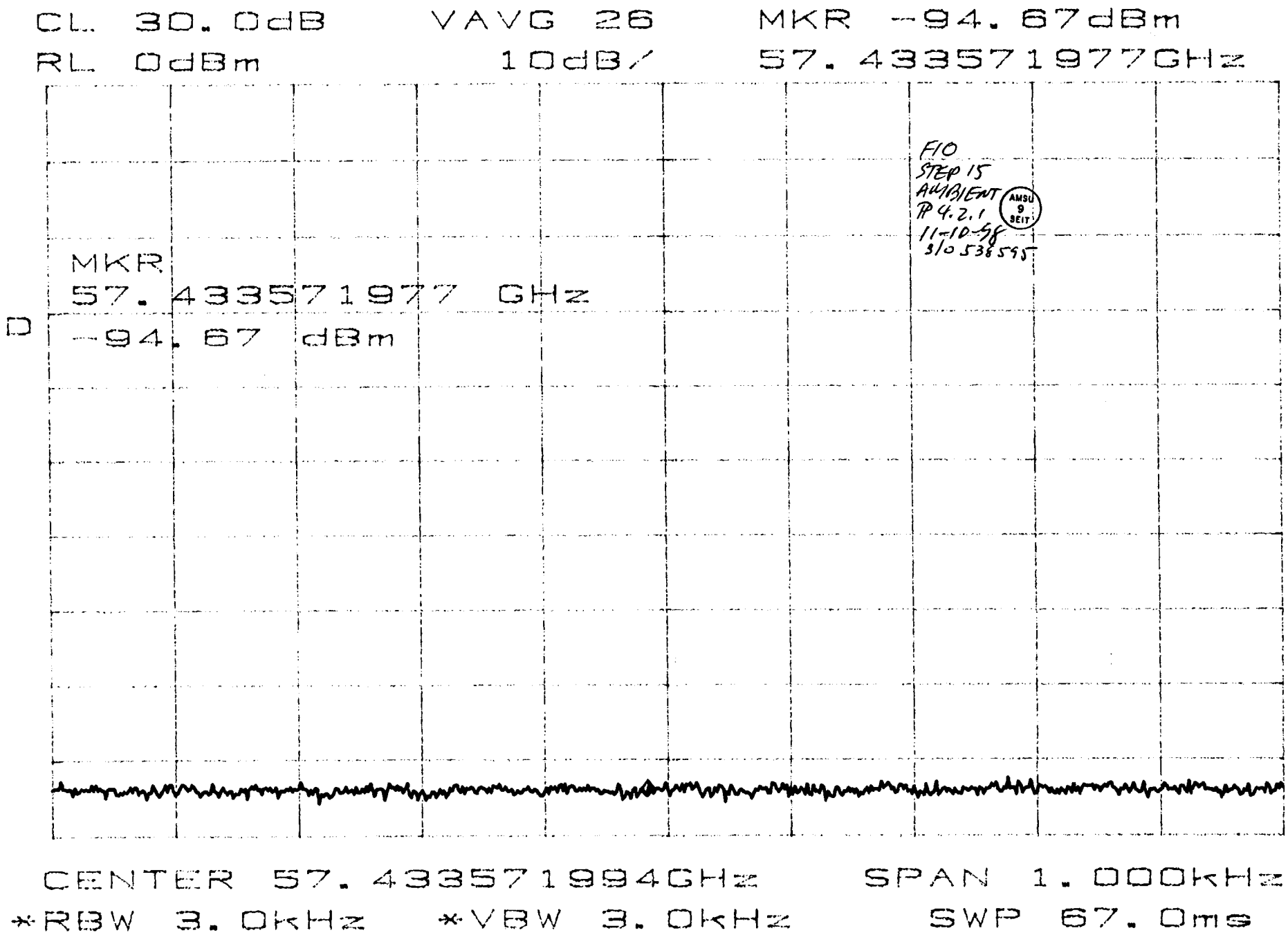

L 30.0dB
RL 0dBm
10dB/
MKR -3.33dBm
57.29034GHz
MKR
57.29034 GHz
-3.33 dBm
F10
STEP 12
AMBIENT
TP 4.2.1
11-10-98
S/O 538595
AMSU 9 9EIT
CENTER 57.29034GHz
*RBW 300KHz
*VBW 1.0MHz
SPAN 10.00MHz
SWP 50.0ms

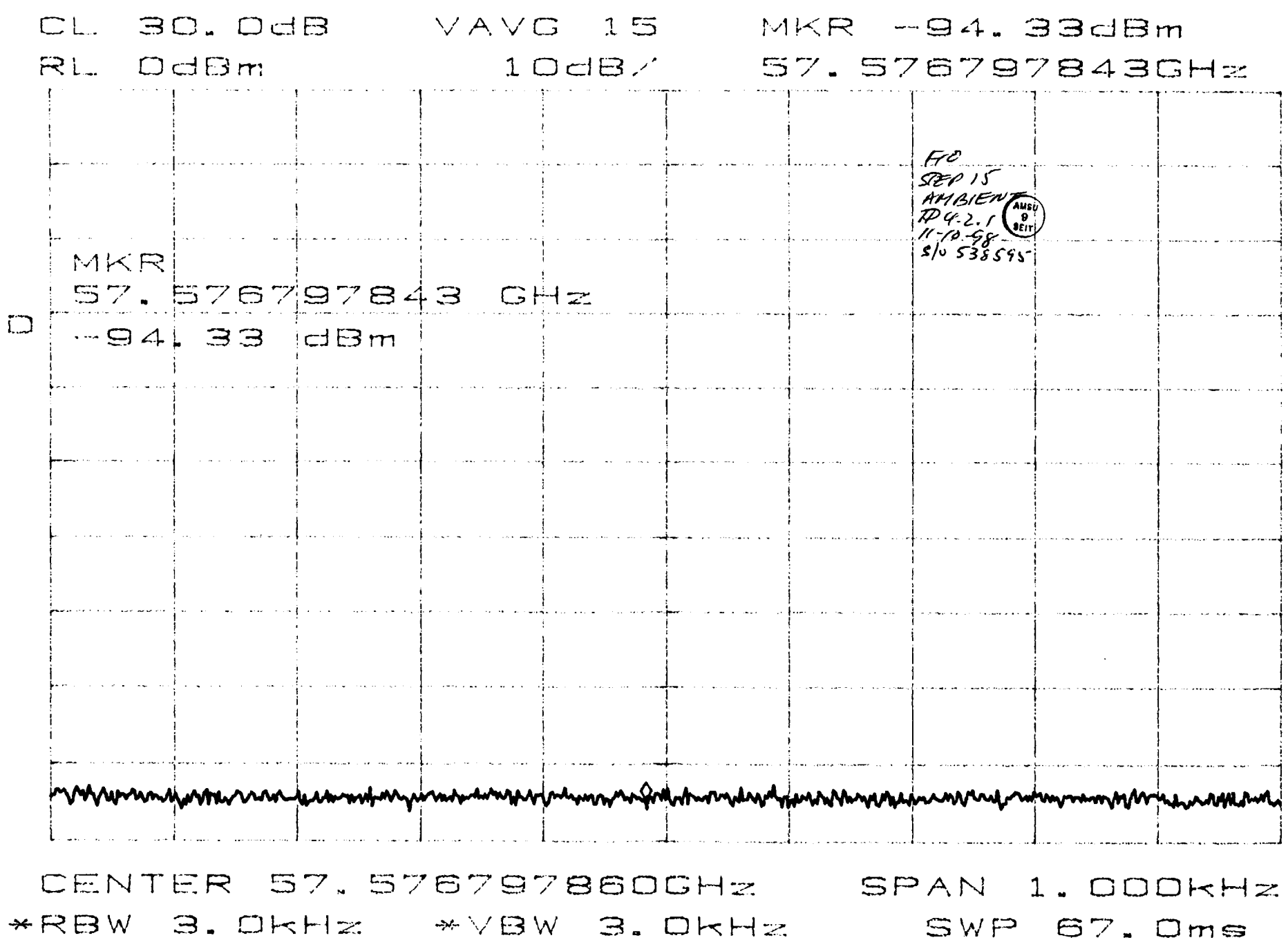

ATTEN 30dB
RL 20.0dBm
10dB/
MKR 12.17dBm
6.8748580GHz
MKR
6.8748580 GHz
12.17 dBm
F10
STEP 12
AMBIENT
TP 4.2.1
11-10-98
S/O 538555
CENTER 6.8748580GHz
SPAN 5.000MHz
*RBW 100kHz
VBW 100kHz
SWP 50.0ms

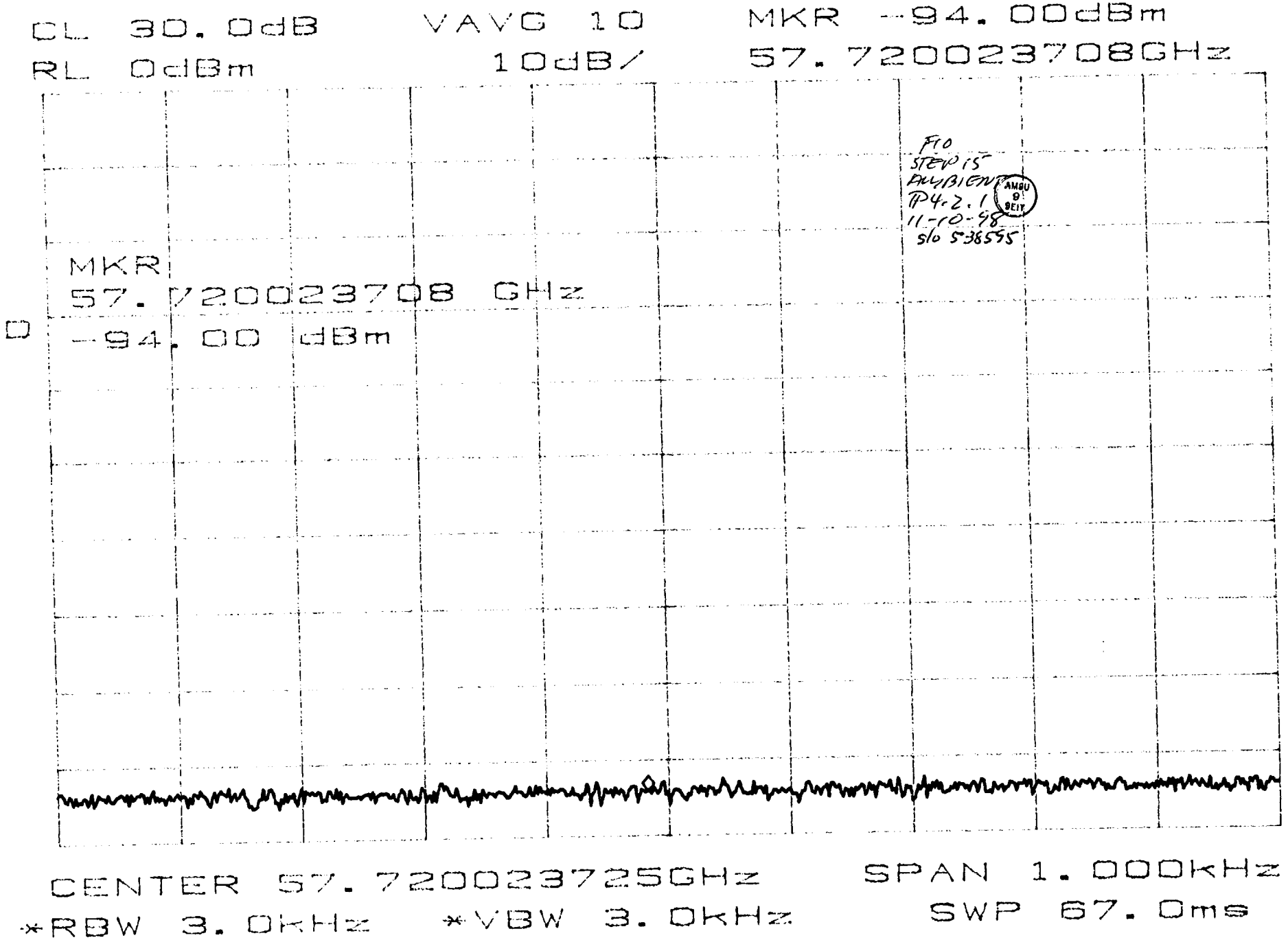

CL 30.0dB
VAVG 53
MKR -94.33dBm
RL 0dBm
10dB/
56.860668516GHz
F10
STEP 15
AMBIENT
TP 4.2.1
11-10-98
S/O 538555
AMSU 9 3EIT
MKR
56.860668516 GHz
-94.33 dBm
D
CENTER 56.860668533GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms

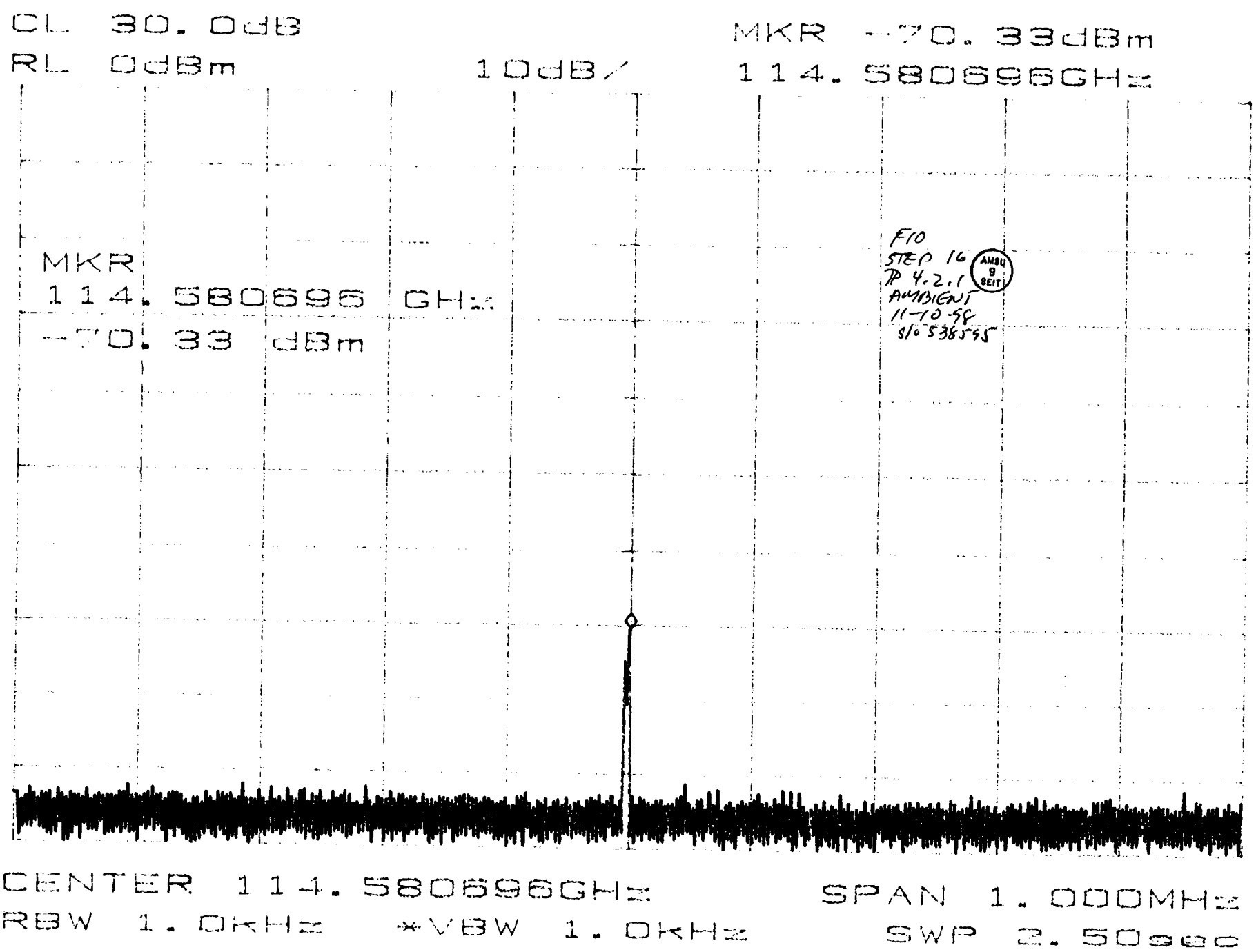

CL 30.0dB
RL 0dBm
VAVG 56
10dB/
MKR -93.67dBm
57.003894381GHz
F10
STEP 15
AMBIENT
TP 4.2.1
11-10-98
S/O 536595
MKR
57.003894381 GHz
-93.67 dBm
CENTER 57.003894398GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 68
MKR -94.17dBm
RL 0dBm
10dB/
57.147120247GHz
F10
STEP15
ID 4.2.1
AMBIENT
11-10-98
S/O 538555
AMBU
SEIT
MKR
57.147120247 GHz
-94.17 dBm
D
CENTER 57.147120264GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 26
MKR -94.67dBm
RL 0dBm
10dB/
57.433571977GHz
F10
STEP 15
AMBIENT
TP 4.2.1
11-10-98
S/O 538595
AMSU 9 BEIT
MKR
57.433571977 GHz
D
-94.67 dBm
CENTER 57.433571994GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 15
MKR -94.33dBm
RL 0dBm
10dB/
57.576797843GHz
FC
STEP 15
AMBIENT
RD 9.2.1
11-10-98
S/O 538595
AMSU B SEIT
MKR
57.576797843 GHz
-94.33 dBm
D
CENTER 57.576797860GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 10
MKR -94.00dBm
RL 0dBm
10dB/
57.720023708GHz
FLO
STEP IS
ALL AMBIENT
TP4.2.1
11-10-98
s/o 538595
AMBU & SEIT
MKR
57.720023708 GHz
-94.00 dBm
CENTER 57.720023725GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms

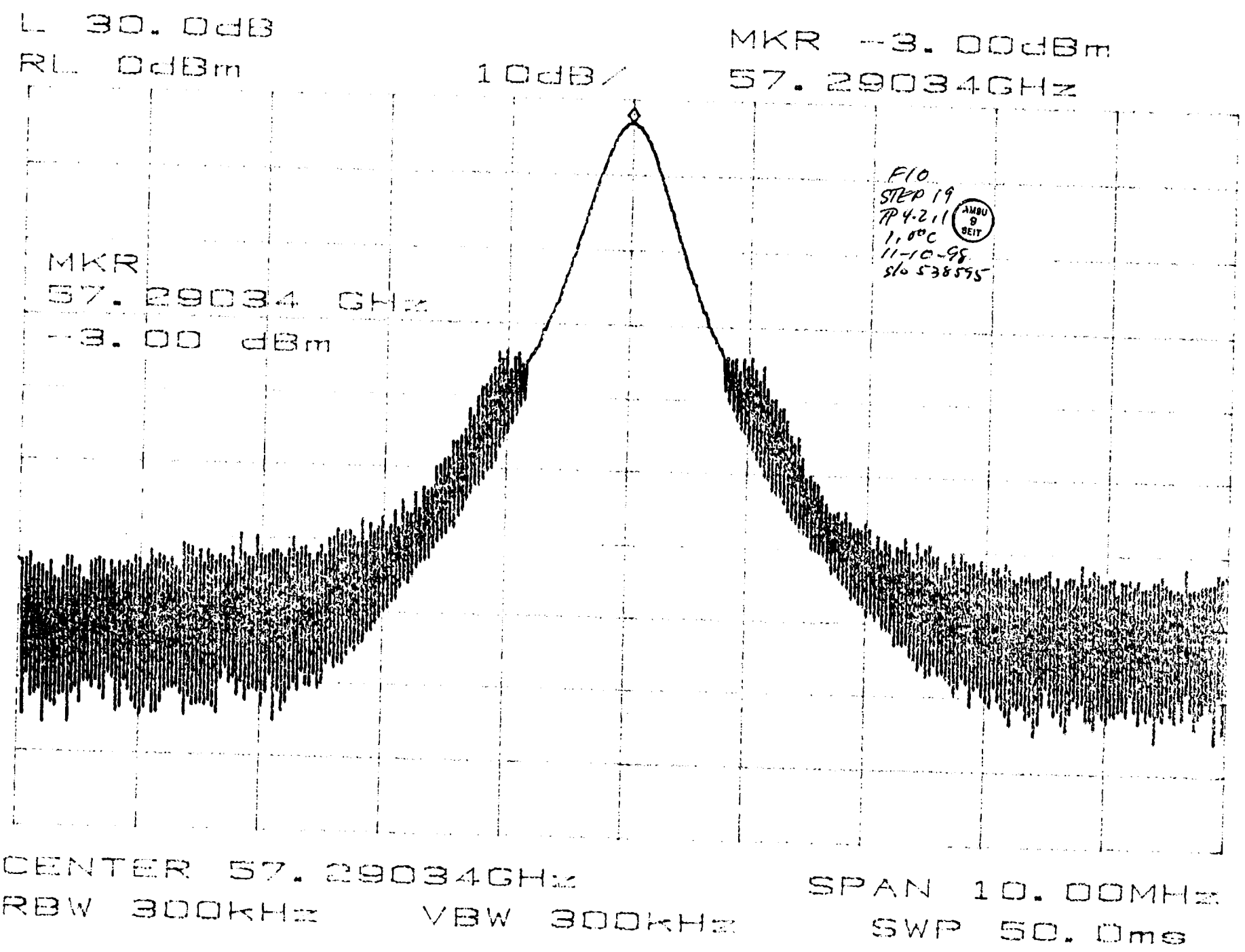

CL 30.0dB
RL 0dBm
10dB/
MKR -70.33dBm
114.580696GHz
MKR
114.580696 GHz
-70.33 dBm
F10
STEP 16
TP 4.2.1
AMBIENT
11-10-98
S/O 53855
AMBU
9
BEIT
CENTER 114.580696GHz
SPAN 1.000MHz
*RBW 1.0KHz
*VBW 1.0KHz
SWP 2.50sec

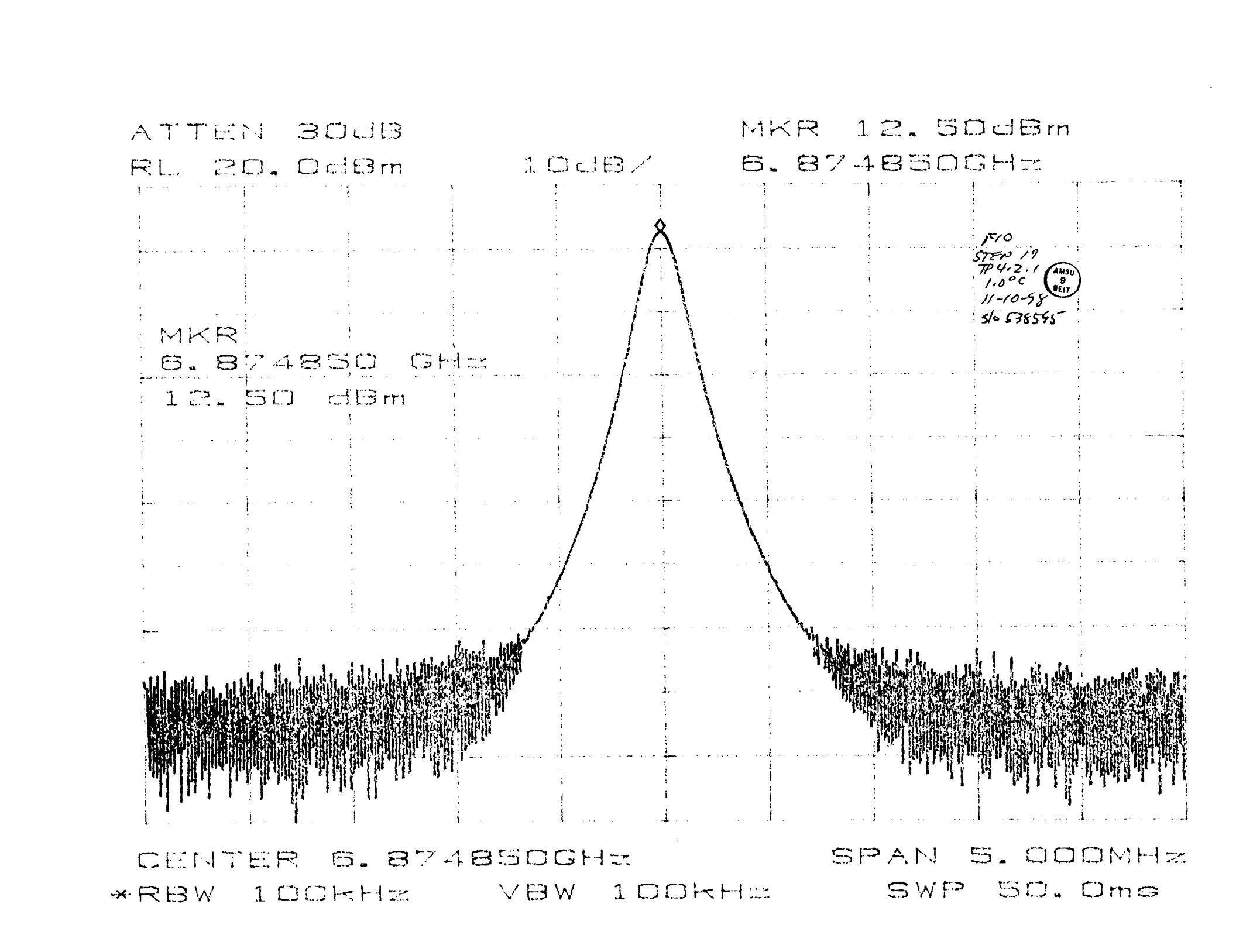
TEST DATA SHEET 6C (Sheet 2 of 4)
Functional Testing (Paragraph 4.2.1)

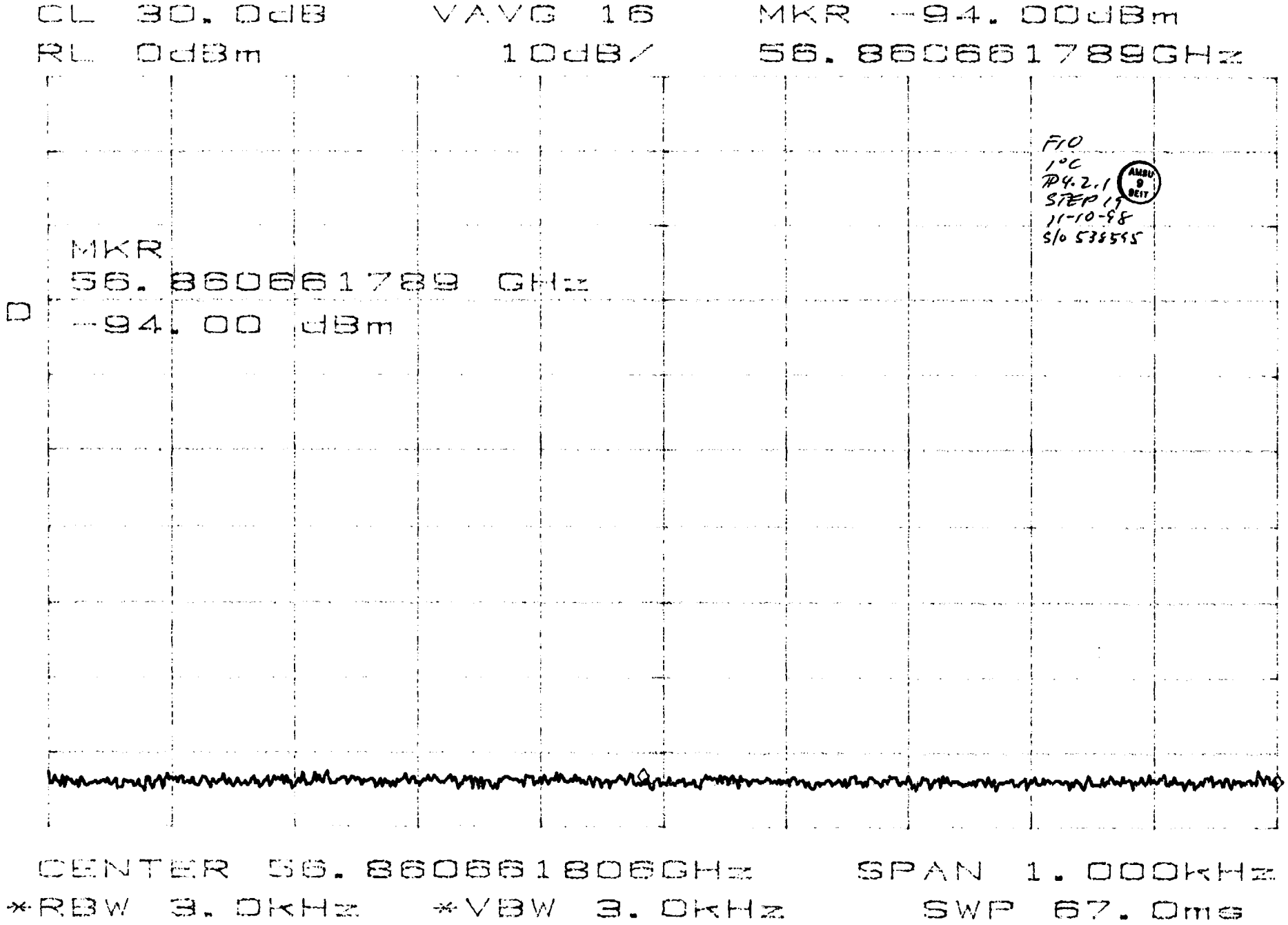
Post-Thermal Cycling CPT

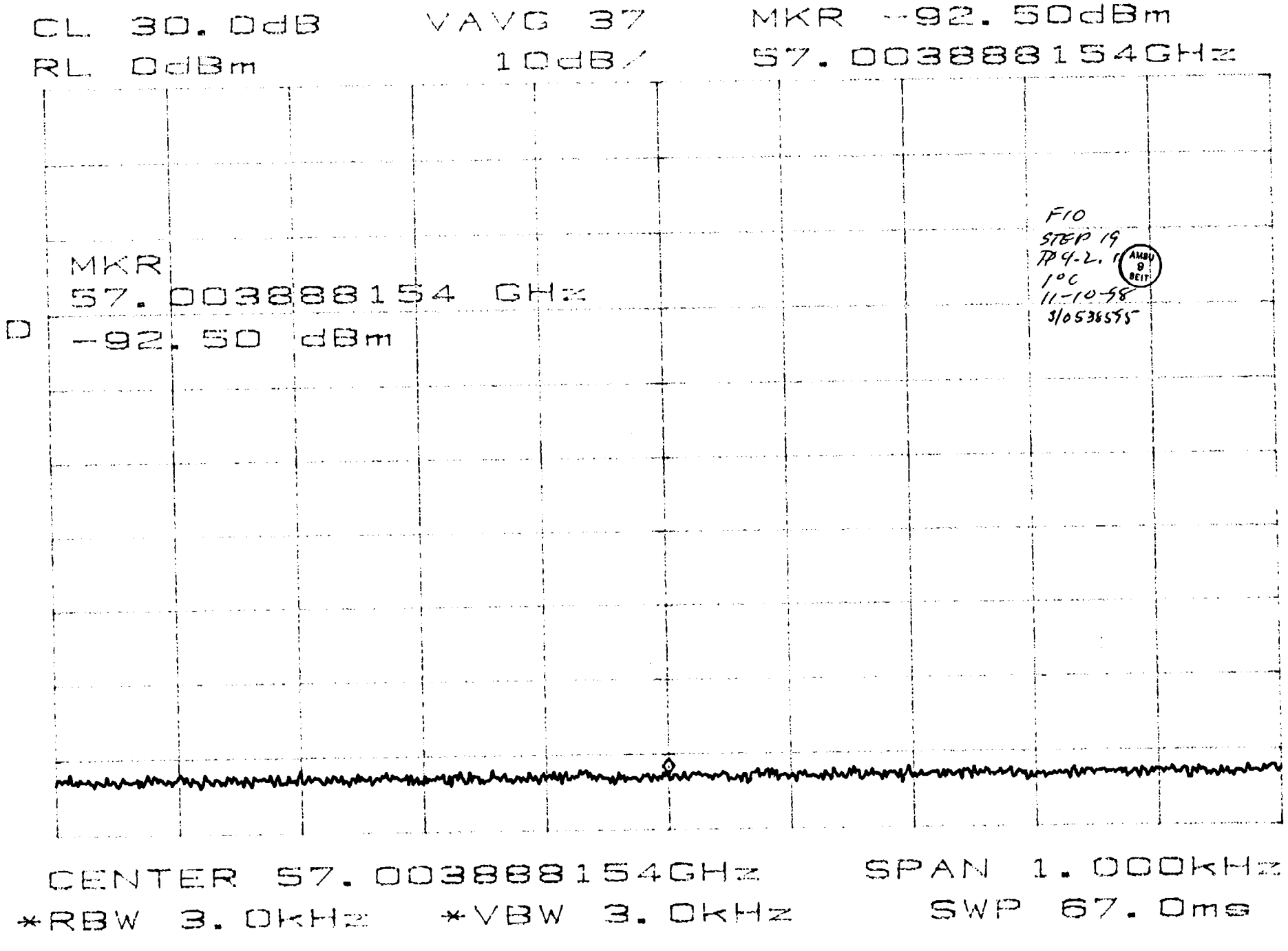
Paragraph 4.2.1.3 (Cont):

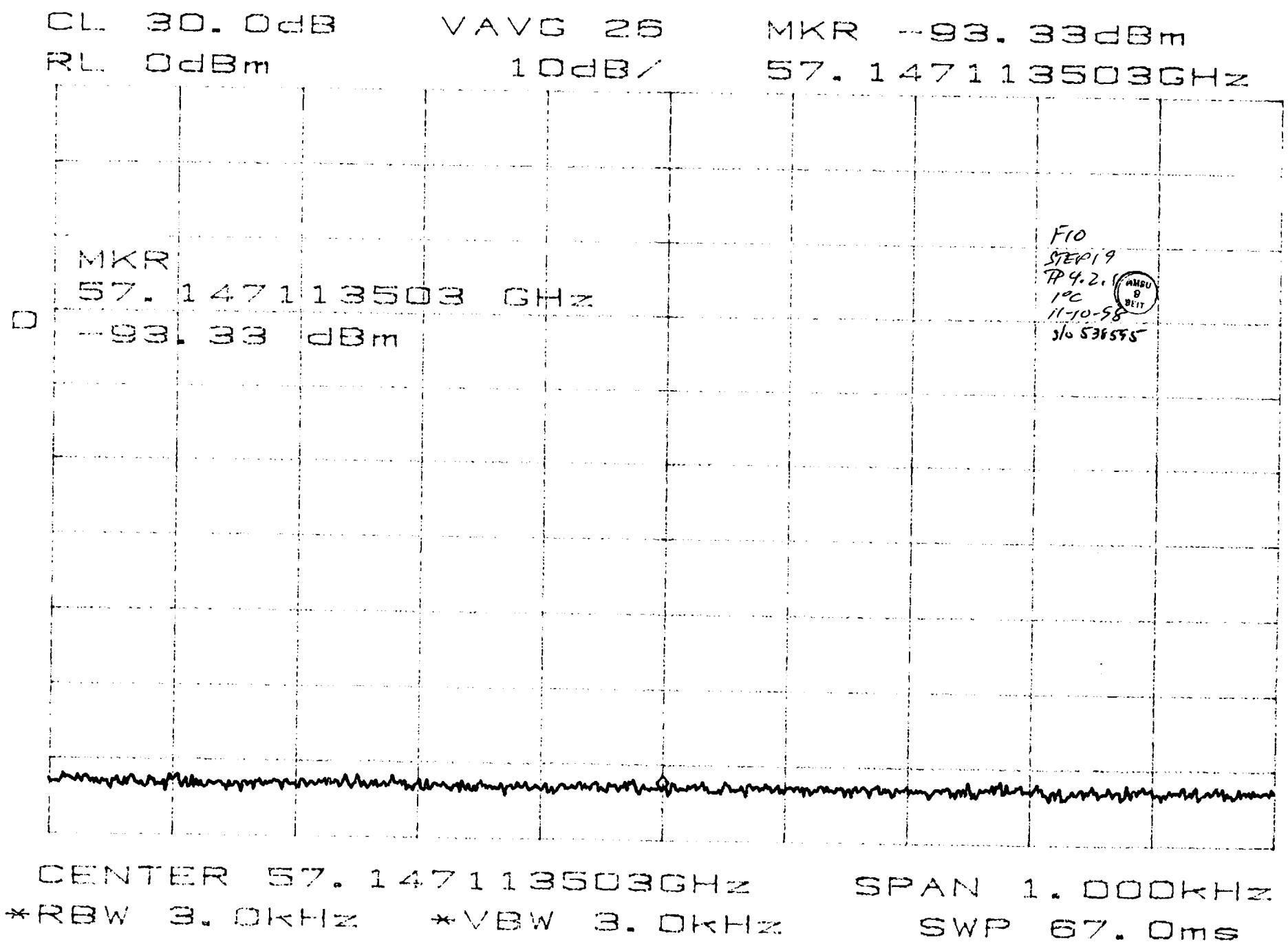
Step	Test	Expected	Measured	Pass/ Fail
13	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = +15.20 V	Pass
		-15.2 ± 0.05 V	-Voltage = -15.20 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290 346667 GHz	Pass
		17 to 20 dBm	P = 17.83 dBm	Pass
14	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = 14.80 V	Pass
		-14.8 ± 0.05 V	-Voltage = -14.80 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290354965 GHz	Pass
		17 to 20 dBm	P = 17.81 dBm	Pass
15	Spurious and Sub	-200 to -90 dBc	See Plots	Pass
16	Power level of 114.58 GHz signal	<-10 dBm	-70.33 dBm	Pass
17	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 6 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 0.07 dB Peak	N/A
18	Operating Temperature @ 1°C baseplate	TC1 = 1 ±2°C	TC1 = 1.70 C	
			TC2 = 2.4° C	N/A
			TC3 = 1.1 °C	N/A
		0 - 1V	DRO L/A = 60m V	Pass
		S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.55 V	Pass
19	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.0 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	Pass
	IM1 Current	600 mA max.	IM1 = 520 mA	Pass
	IM2 Current	100 mA max.	IM2 = ~65.7 mA	Pass
	DRO L/A Voltage	0 to 1V	DRO L/A = 60 m V	Pass
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.55 V	Pass
	RF Output Power	17 to 20 dBm	Power = 18.75 dBm	Pass
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290 339351 GHz	Pass

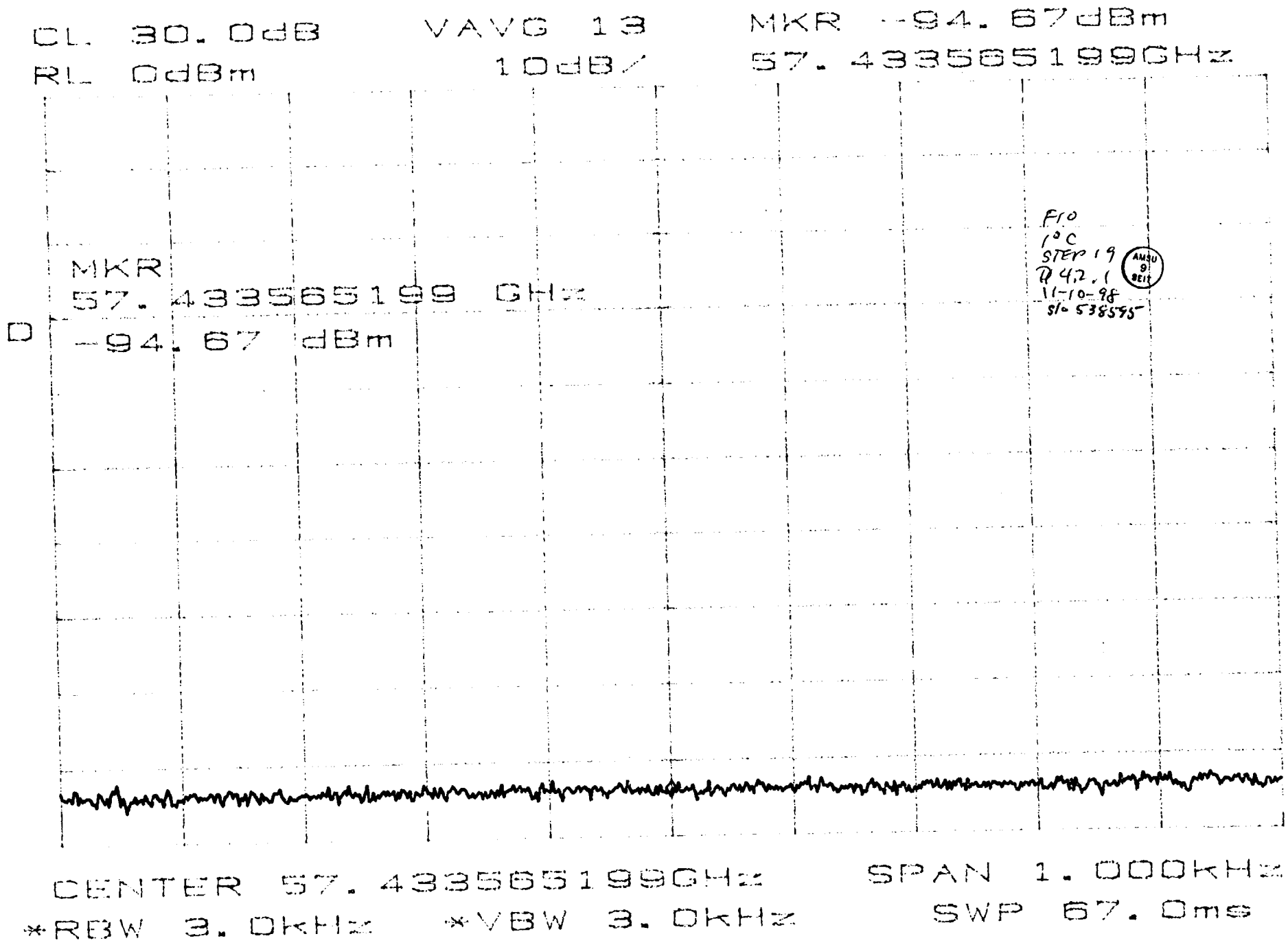

L 30.0dB
RL 0dBm
10dB/
MKR -3.00dBm
57.290346GHz
MKR
57.29034 GHz
-3.00 dBm
F10
STEP 19
TP 4.2.1
1.0°C
11-10-98
S/o 538595
CENTER 57.290346GHz
*RBW 300kHz
VBW 300kHz
SPAN 10.00MHz
SWP 50.0ms

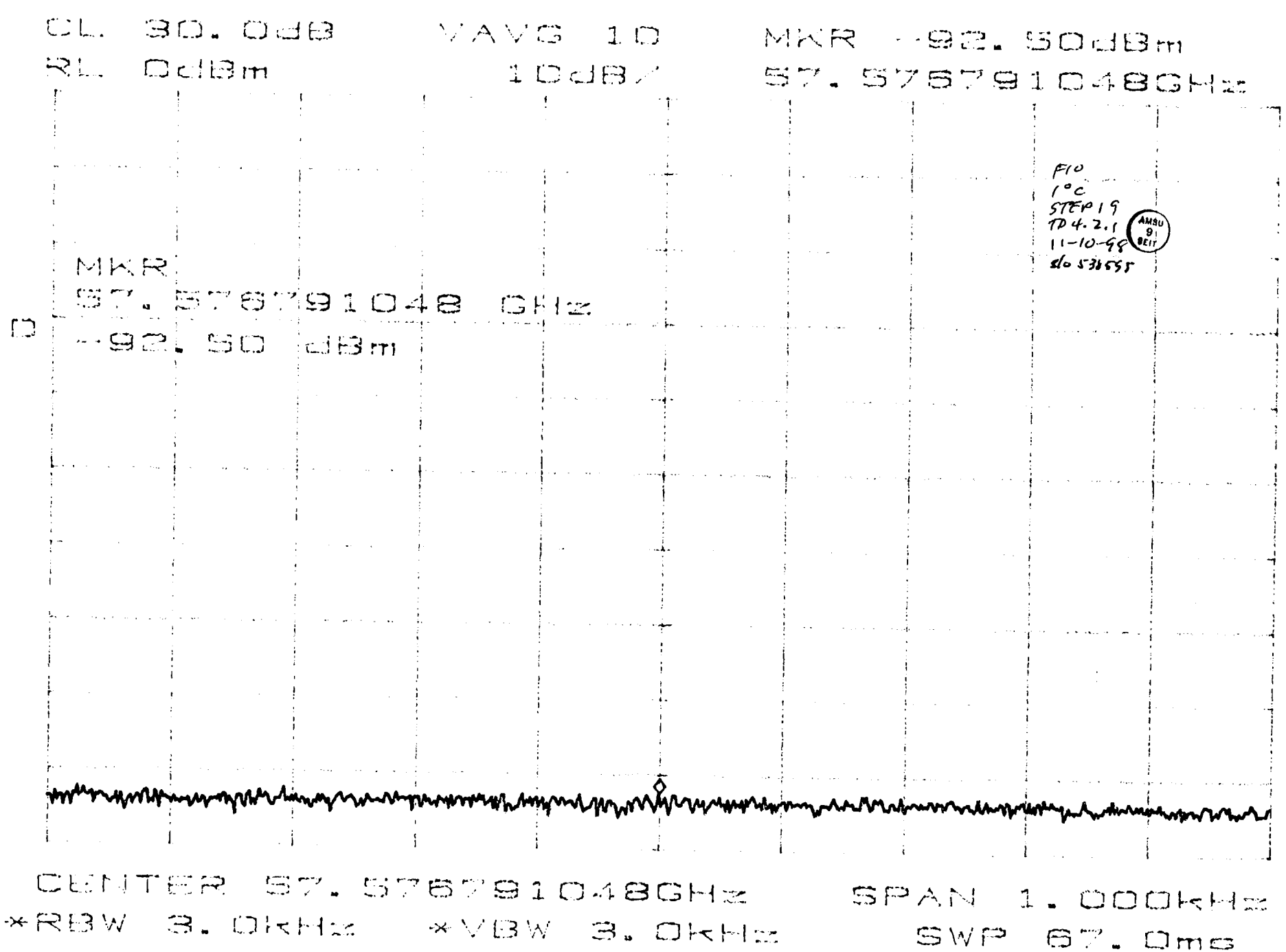

ATTEN 30dB
RL 20.0dBm
10dB/
MKR 12.50dBm
6.874850GHz
MKR
6.874850 GHz
12.50 dBm
F10
STEP 19
TP 4.2.1
1.0°C
11-10-98
S/N 538545
CENTER 6.874850GHz
SPAN 5.000MHz
*RBW 100kHz
VBW 100kHz
SWP 50.0ms

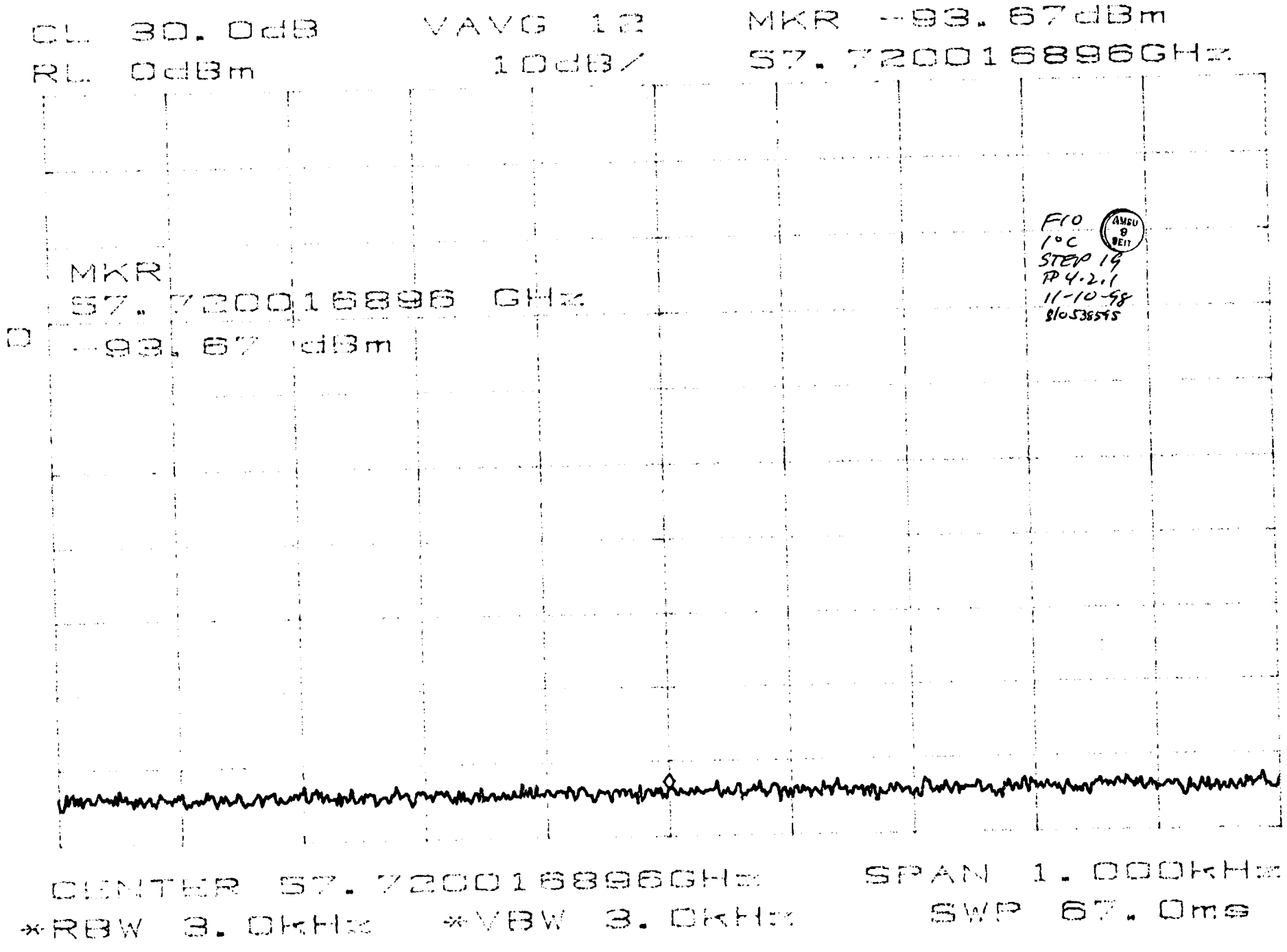

CL 30.0dB
VAVG 16
MKR -94.00dBm
RL 0dBm
10dB/
56.860661789GHz
F10
1°C
TP4.2.1
STEP 19
11-10-98
S/O 535595
MKR
56.860661789 GHz
-94.00 dBm
D
CENTER 56.860661806GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms

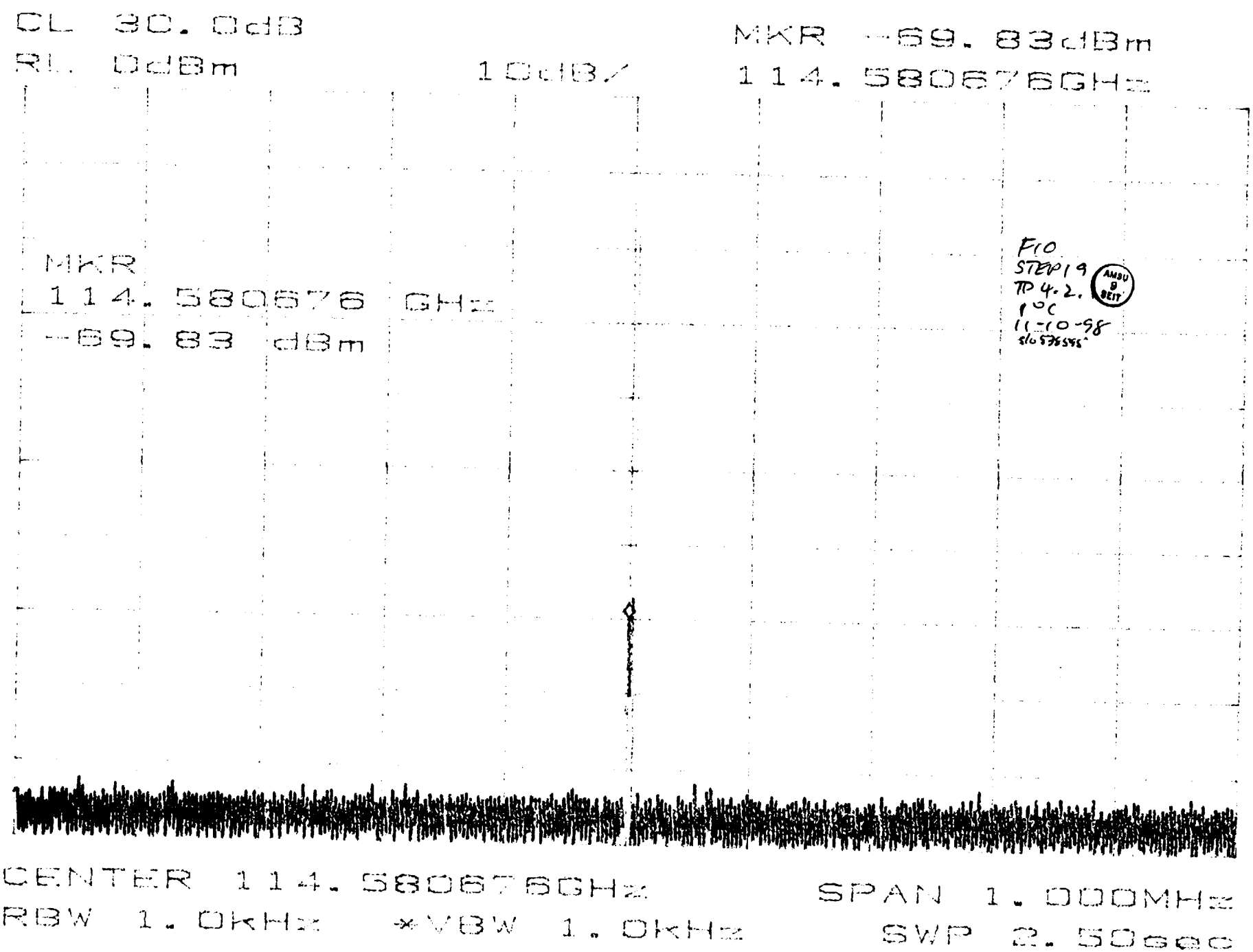

CL 30.0dB
VAVG 37
MKR -92.50dBm
RL 0dBm
10dB/
57.003888154GHz
MKR
57.003888154 GHz
D
-92.50 dBm
F10
STEP 19
RP 4-2.
1°C
11-10-58
3/0536555
CENTER 57.003888154GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 25
MKR -93.33dBm
RL 0dBm
10dB/
57.147113503GHz
MKR
57.147113503 GHz
-93.33 dBm
D
F10
STEP 19
AP 4.2.1
19C
11-10-98
S/N 536595
CENTER 57.147113503GHz
SPAN 1.000KHz
*RBW 3.0KHz
*VBW 3.0KHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 13
10dB/
MKR -94.67dBm
57.433565199GHz
MKR
57.433565199 GHz
-94.67 dBm
Fr0
10C
STEP 19
R 42.1
11-10-98
SIO 538595
CENTER 57.433565199GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 10
10dB/
MKR -92.50dBm
57.575791048GHz
MKR
57.575791048 GHz
-92.50 dBm
P10
1°C
STEP 19
TD 4.2.1
11-10-98
s/o 53655
AMBU
BEIT
CENTER 57.575791048GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 12
10dB/
MKR -93.67dBm
57.720016896GHz
MKR
57.720016896 GHz
-93.67 dBm
FLO
1°C
STEP 19
FP 4.2.1
11-10-98
8105385S5
CENTER 57.720016896GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms

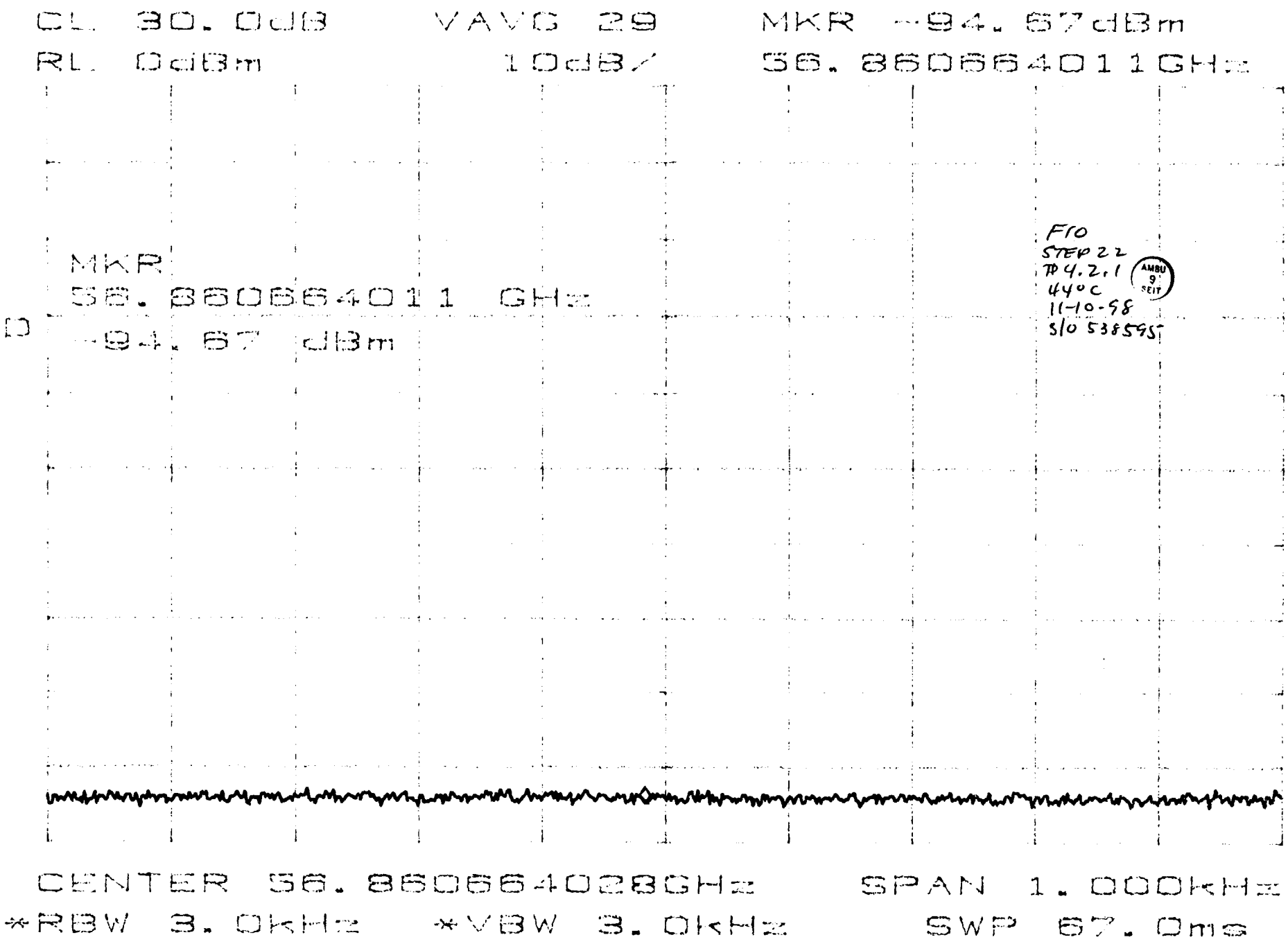

CL 30.0dB
RL 0dBm
10dB/
MKR -69.83dBm
114.580676GHz
MKR
114.580676 GHz
-69.83 dBm
FLO
STEP 19
TP 4.2.
1°C
11-10-98
CENTER 114.580676GHz
SPAN 1.000MHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 2.50sec

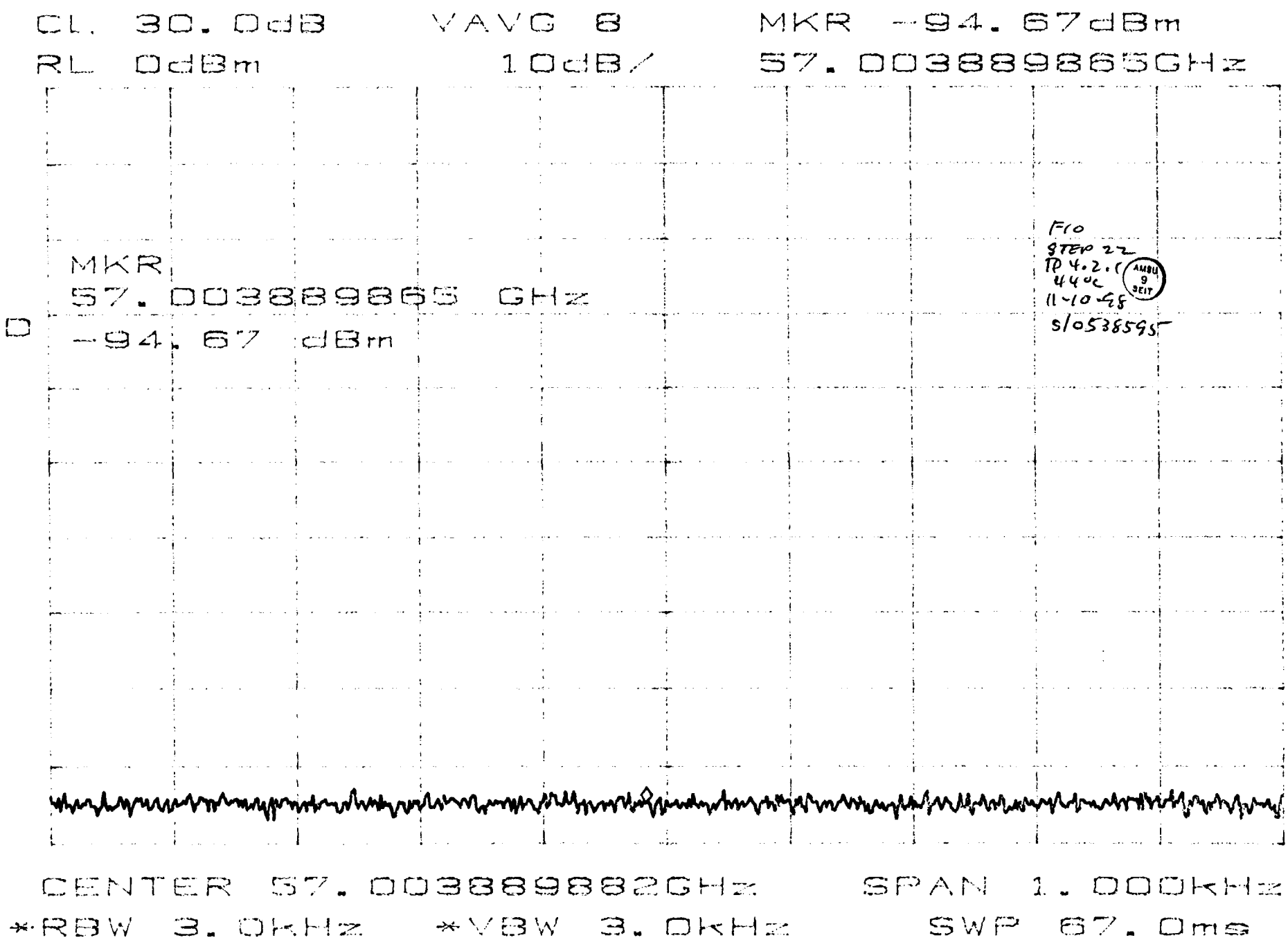
TEST DATA SHEET 6C (Sheet 3 of 4)
Functional Testing (Paragraph 4.2.1)

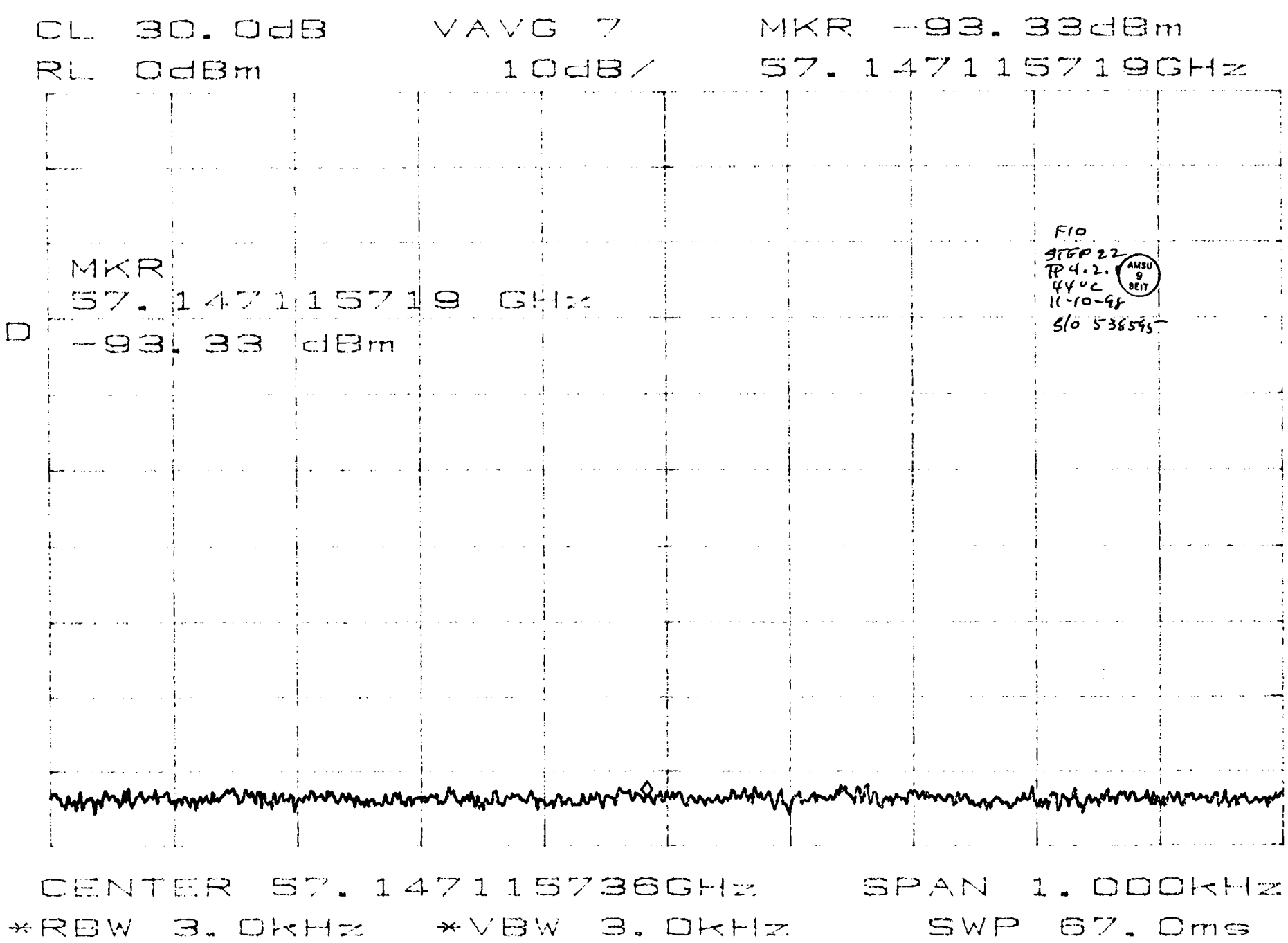
Post-Thermal Cycling CPT

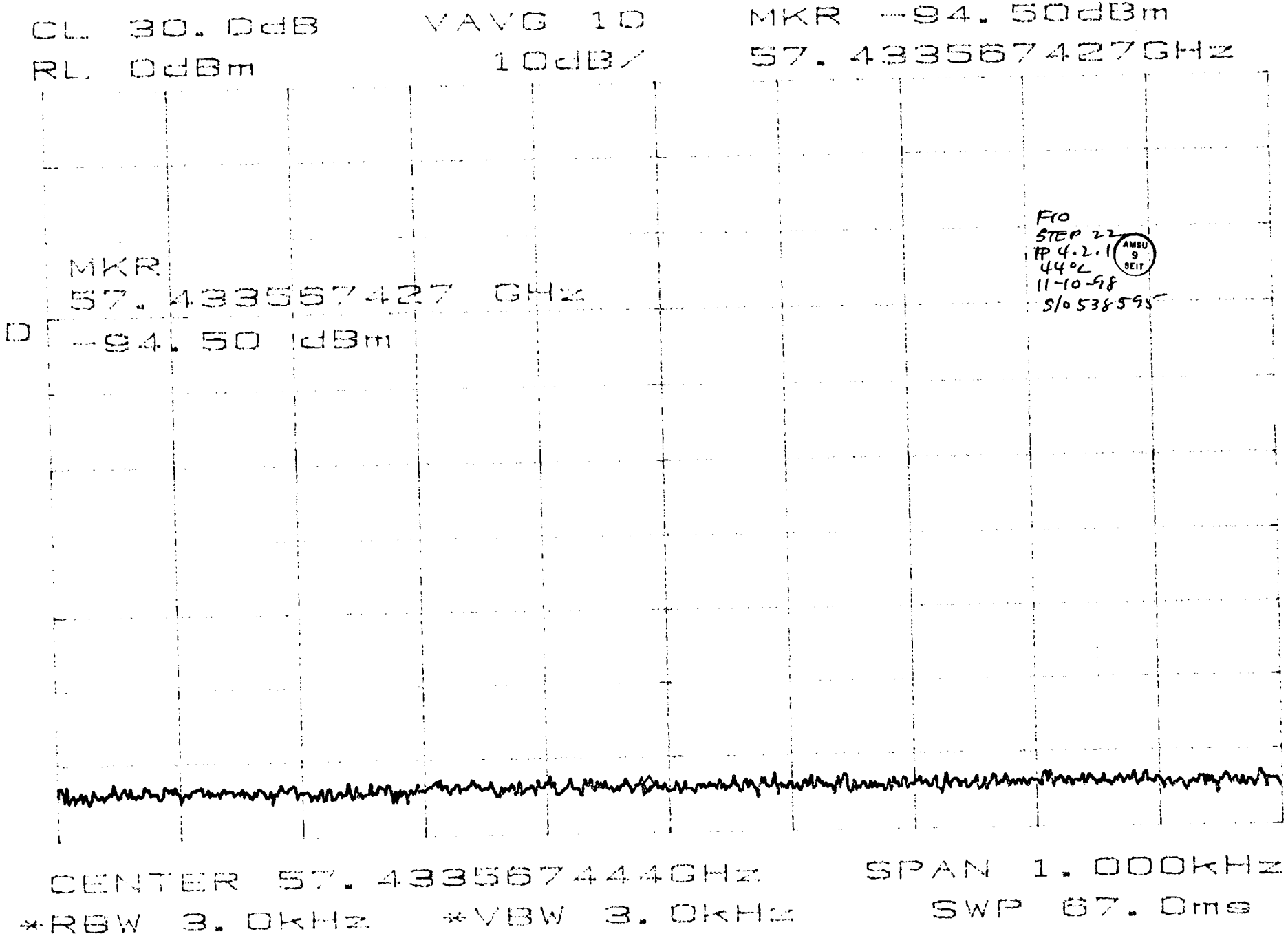
Paragraph 4.2.1.3 (Cont):

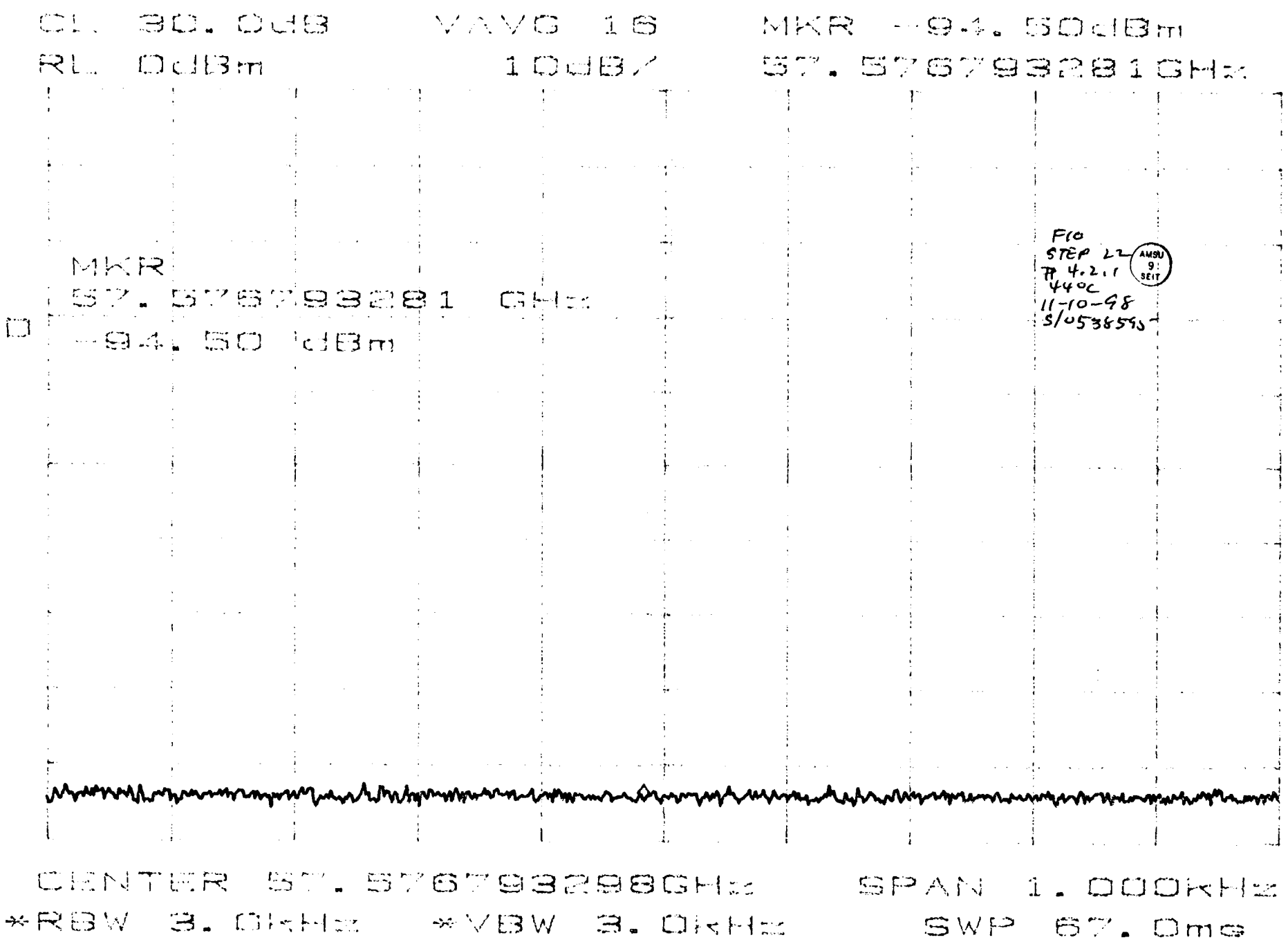
Step	Test	Expected	Measured	Pass/ Fail
19 (Cont)	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = +15.23 V	Pass
		-15.2 ± 0.05 V	-Voltage = -15.23 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290337429 GHz	Pass
		17 to 20 dBm	Power = 18.2 dBm	Pass
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = +14.85 V	Pass
		-14.8 ± 0.05 V	-Voltage = -14.85 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290 337111 GHz	Pass
		17 to 20 dBm	Power = 18.6 dBm	Pass
	Spurious and Sub	-200 to -90 dBc	see plots	Pass
	Power level of 114.58 GHz signal	<-10 dBm	~69 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 5 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 0.7 dB	N/A
21	Operating Temperature @ +44°C Baseplate	TC1 = 44 ±2°C	TC1 = 43.3	
			TC2 = 43.2	N/A
			TC3 = 42.8	N/A
		0 - 1V	DRO L/A = 110 m V	Pass
		S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.55 V	Pass
22	Input Voltage and Current			
	VM1 Voltage	+15 ± 0.1 V	VM1 = +15.0 V	Pass
	VM2 Voltage	-15 ± 0.1 V	VM2 = -15.0 V	Pass
	IM1 Current	600 mA max.	IM1 = 343 mA	Pass
	IM2 Current	100 mA max.	IM2 = ~71.3 mA	Pass
	DRO L/A Voltage	0 to 1V	DRO L/A = 110 m V	Pass
	PLO L/A Voltage	S/N: F06, F07, F08 = 14.6 ± 0.4V S/N: F05, F09 - F14 = 4.3 to 4.7V	PLO L/A = 4.55 V	Pass
	RF Output Power and	17 to 20 dBm	Power = 17.1 dBm	Pass
	Frequency	57.290344 ± .0002 GHz	Freq. = 57.290341590 GHz	Pass

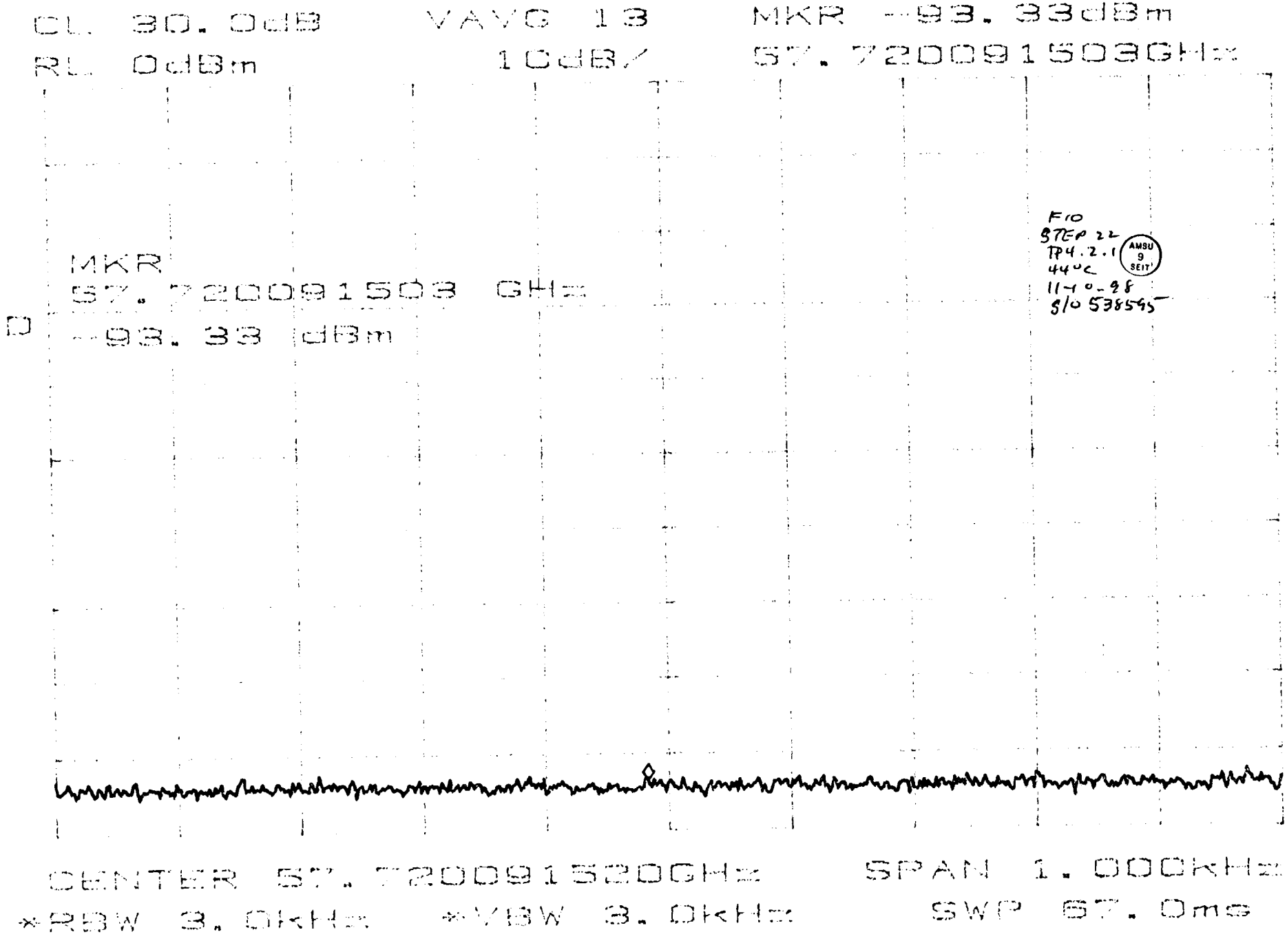

CL 30.0dB
RL 0dBm
VAVG 29
10dB/
MKR -94.67dBm
56.860664011GHz
MKR
56.860664011 GHz
-94.67 dBm
D
F10
STEP 22
TP 4.2.1
44°C
11-10-98
S/O 5385957
AMBU 9 SEIT
CENTER 56.860664028GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms

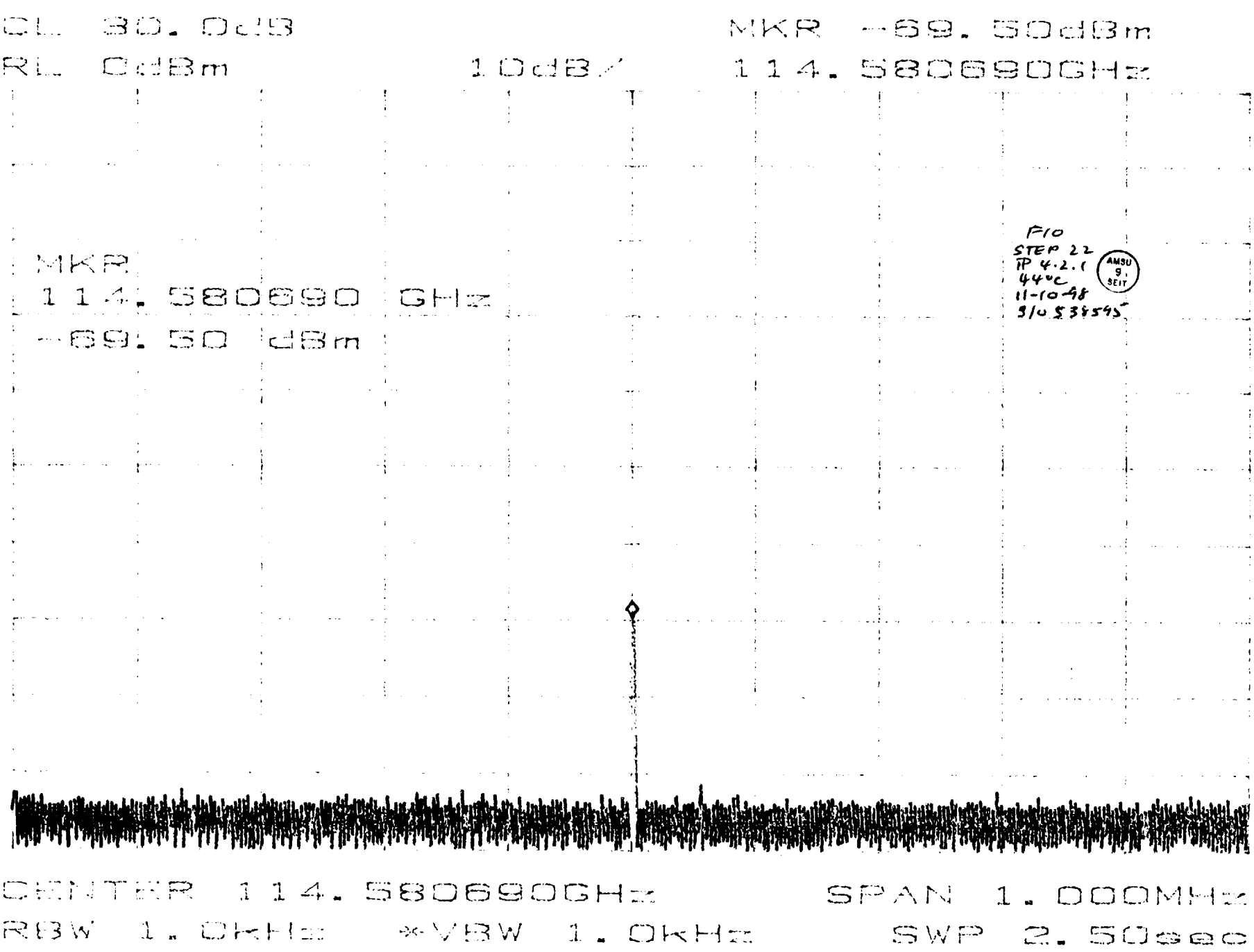

CL 30.0dB
VAVG 8
MKR -94.67dBm
RL 0dBm
10dB/
57.003889865GHz
MKR
57.003889865 GHz
-94.67 dBm
D
FIO
STEP 22
TP 4.2.1
44°C
11-10-98
S/0538595
CENTER 57.003889882GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
VAVG 7
MKR -93.33dBm
RL 0dBm
10dB/
57.147115719GHz
MKR
57.147115719 GHz
-93.33 dBm
D
F10
STEP 22
TP 4.2.
44°C
11-10-98
S/O 538595
CENTER 57.147115736GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 10
10dB/
MKR -94.50dBm
57.433567427GHz
MKR
57.433567427 GHz
-94.50 dBm
FIO
STEP 22
FP 4.2.1
44°C
11-10-98
S/O 538595
CENTER 57.433567440GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 16
10dB/
MKR -94.50dBm
57.576793281GHz
MKR
57.576793281 GHz
-94.50 dBm
F10
STEP 22
TP 4.2.1
44°C
11-10-98
S/0538595
CENTER 57.576793298GHz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
VAVG 13
10dB/
MKR -93.33dBm
ST. 7200915030Hz
MKR
ST. 7200915030 GHz
-93.33 dBm
F10
STEP 22
TP4.2.1
44°C
114-98
S/O 538545
AMSU
9
SEIT
CENTER ST. 7200915200Hz
SPAN 1.000kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 67.0ms


CL 30.0dB
RL 0dBm
10dB/
MKR -69.50dBm
114.580690GHz
MKR
114.580690 GHz
-69.50 dBm
P10
STEP 22
TP 4.2.1
44°C
11-10-98
9/0538545
AMSU
CENTER 114.580690GHz
SPAN 1.000MHz
*RBW 1.0kHz
*VBW 1.0kHz
SWP 2.50sec

TEST DATA SHEET 6C (Sheet 4 of 4)
Functional Testing (Paragraph 4.2.1)

Post-Thermal Cycling CPT

Paragraph 4.2.1.3 (Cont):

Step	Test	Expected	Measured	Pass/Fail
22 (Cont)	Frequency vs. Voltage			
	± 15 V Supplies	+15.2 ± 0.05 V	+Voltage = +15.24 V	Pass
		-15.2 ± 0.05 V	-Voltage = 15.26 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290342419 GHz	Pass
		17 to 20 dBm	Power = 17.1 dBm	Pass
	Frequency vs. Voltage			
	± 15 V Supplies	+14.8 ± 0.05 V	+Voltage = +14.85 V	Pass
		-14.8 ± 0.05 V	-Voltage = -14.84 V	Pass
		57.290344 ± .0002 GHz	Freq. = 57.290342793 GHz	Pass
		17 to 20 dBm	Power = 17.1 dBm	Pass
	Spurious and Sub	-200 to -90 dBc	See plots	Pass
	Power level of 114.58 GHz signal	<-10 dBm	-69 dBm	Pass
	Load VSWR and Frequency Pulling			
	2:1 mismatch over 1λ	N/A	Worst Case Freq = 0.5 Hz	N/A
	2:1 mismatch over 1λ	N/A	Worst Case Power = 0.6 dB	N/A

Shop Order No.: 538595

Operation: 0170

Unit Serial No.: F10

Date: 11-10-98

Test Engineer: AMSU 9 3EIT

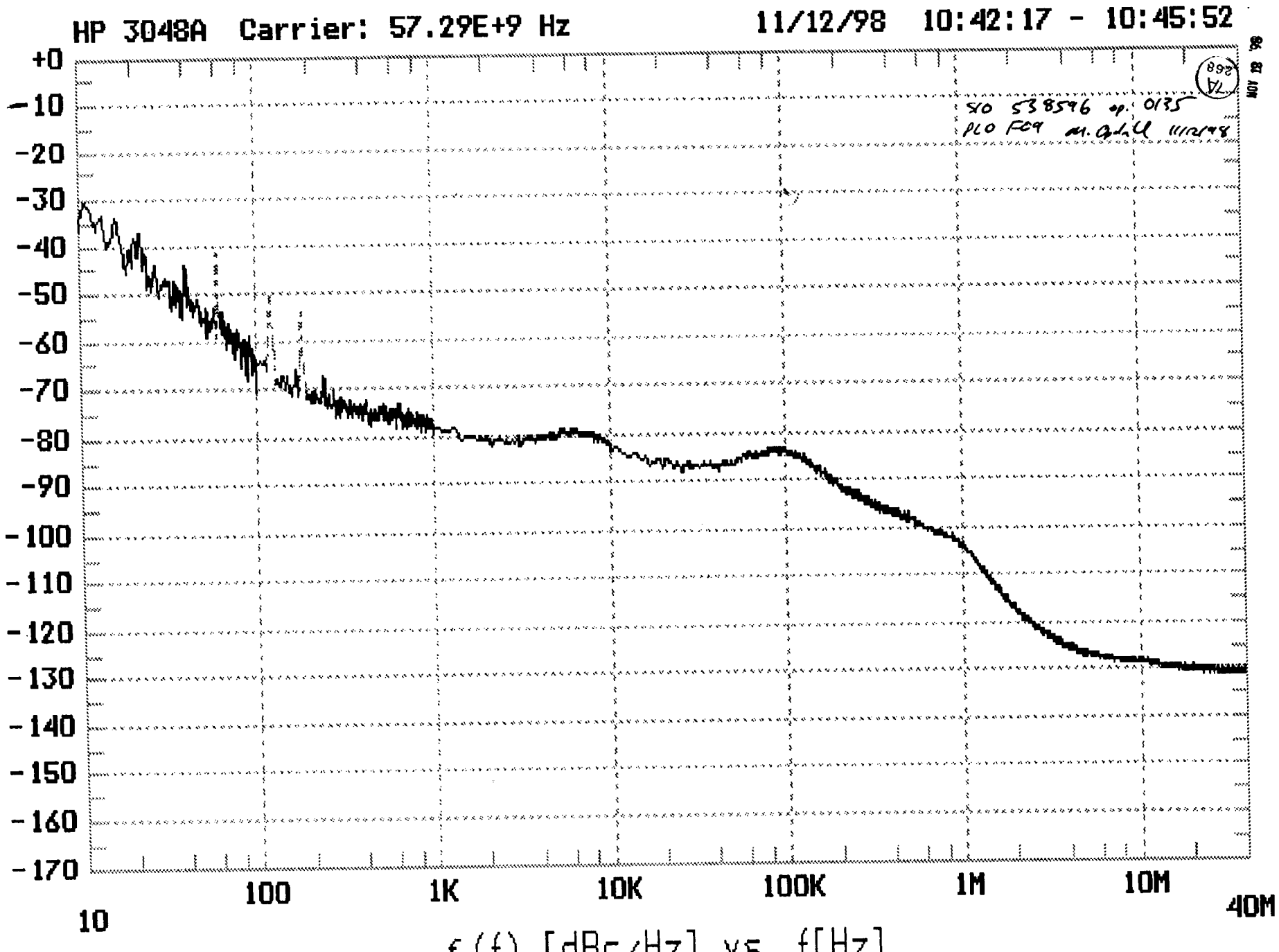
Quality Control: 7A 268 NOV 10 '98

Govt. Rep.: 11/11/98

Section 6A: AM/FM Testing - F09

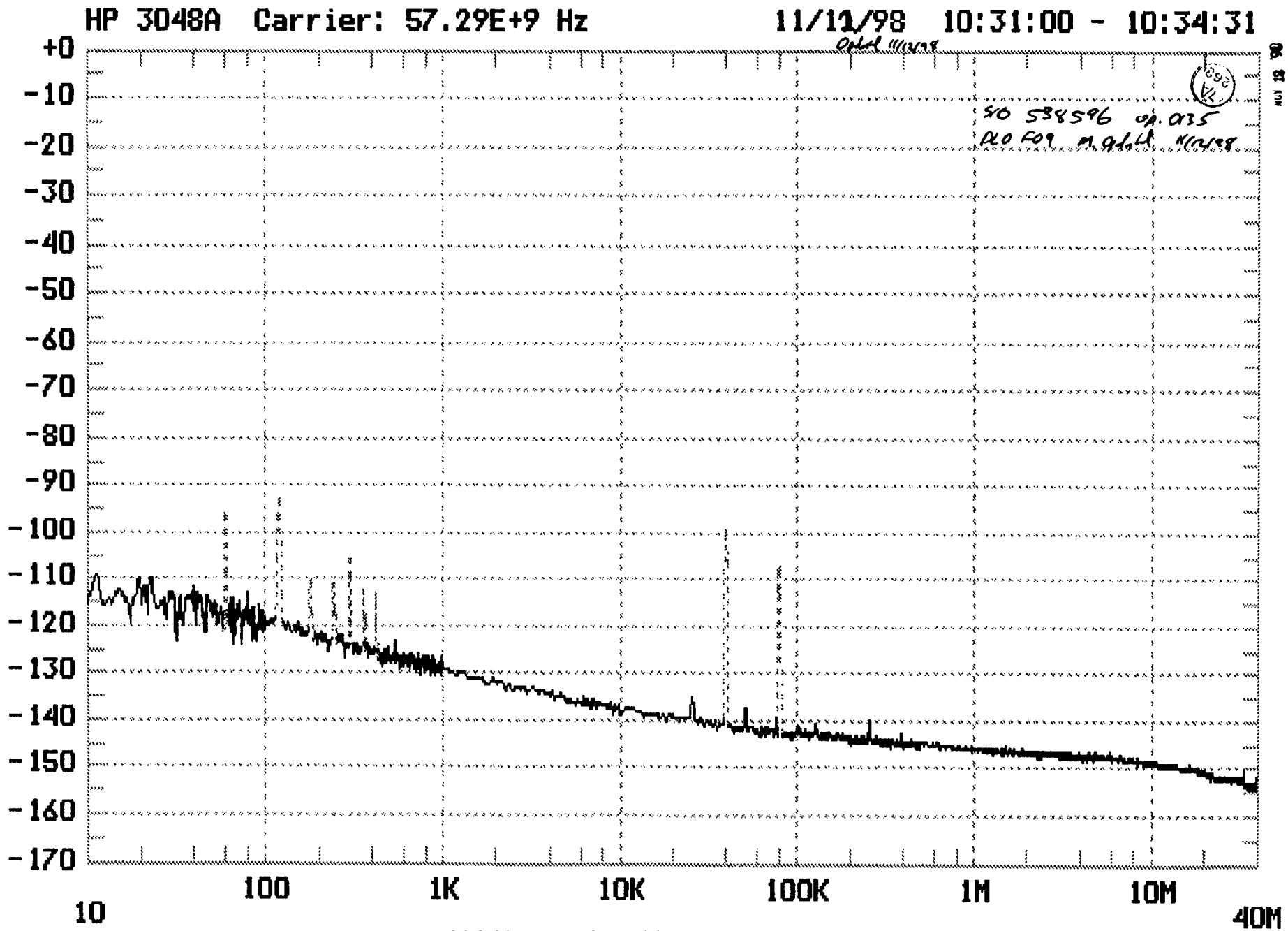
The following section contains the raw data from the AM/FM Noise Tests. Requirements are that the FM Noise level be less than -100 dBc/Hz for frequencies greater than 1 MHz. Requirements are that the AM Noise level be less than 130 dBc/Hz for all frequencies greater than 1 MHz. Both Tests Pass.

FM Noise Test, F09

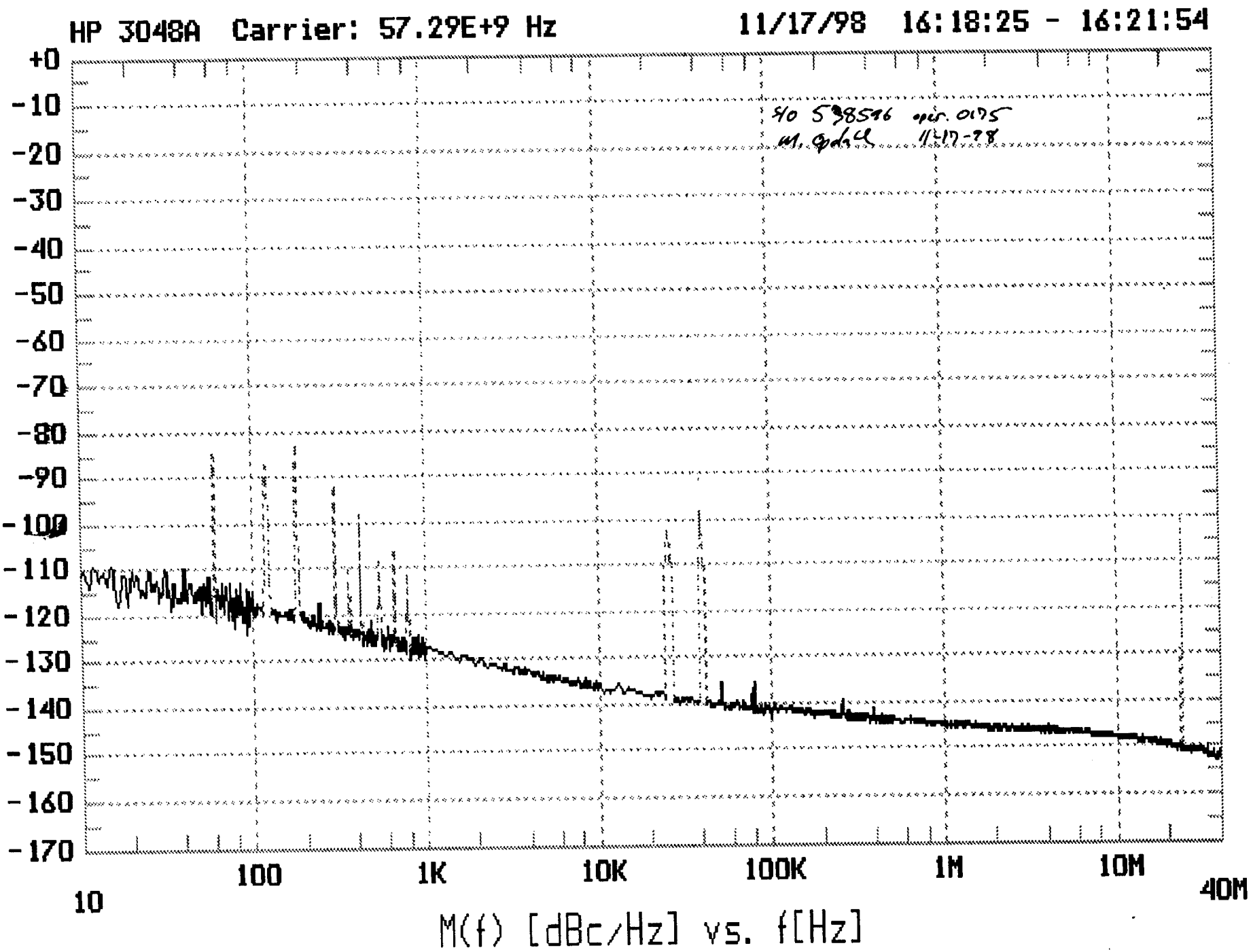


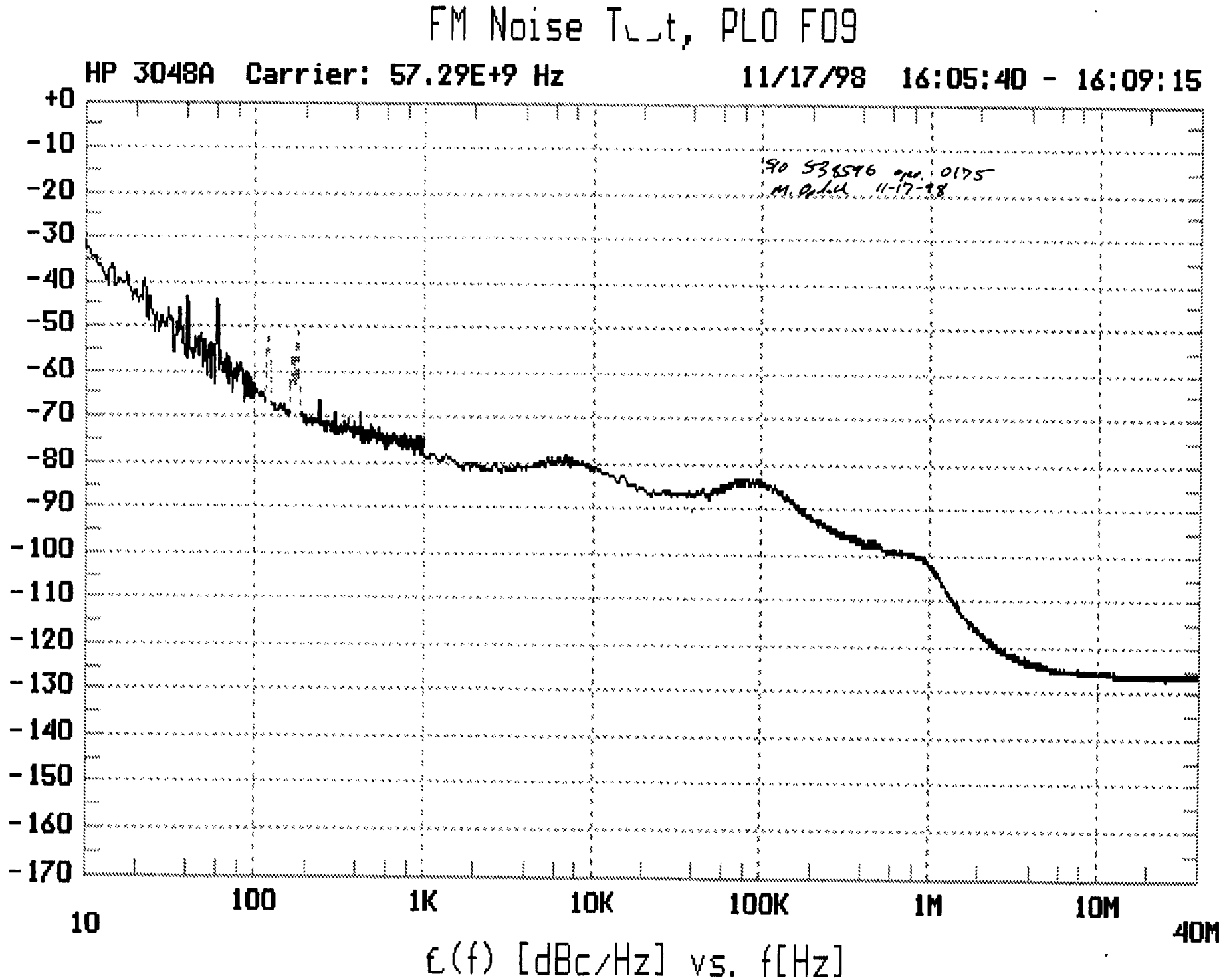
ℒ(f) [dBc/Hz] vs. f[Hz]

AM Noise, F09


HP 3048A Carrier: 57.29E+9 Hz
11/11/98 10:31:00 - 10:34:31
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
M(f) [dBc/Hz] vs. f[Hz]

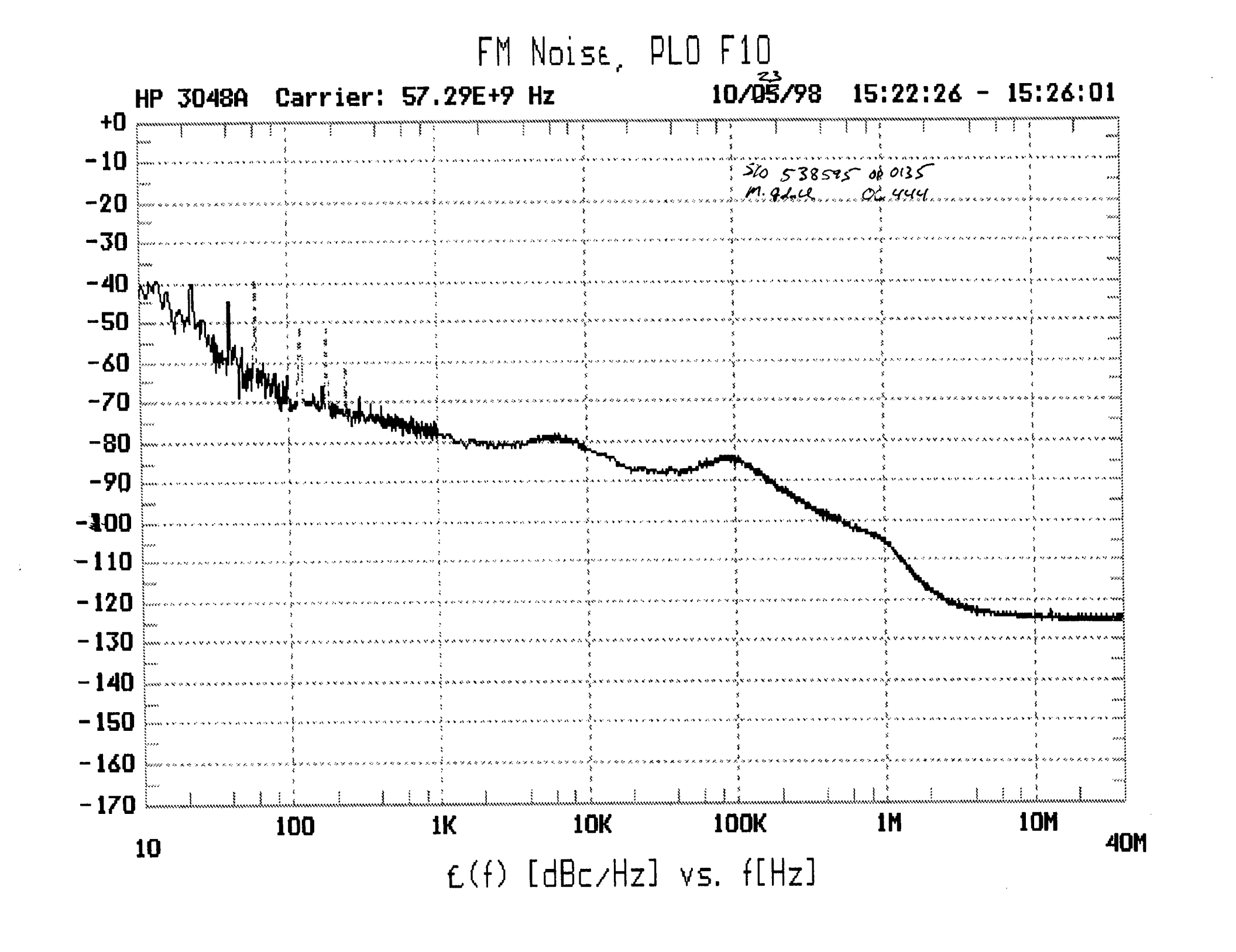
AM Noise, PLO F09

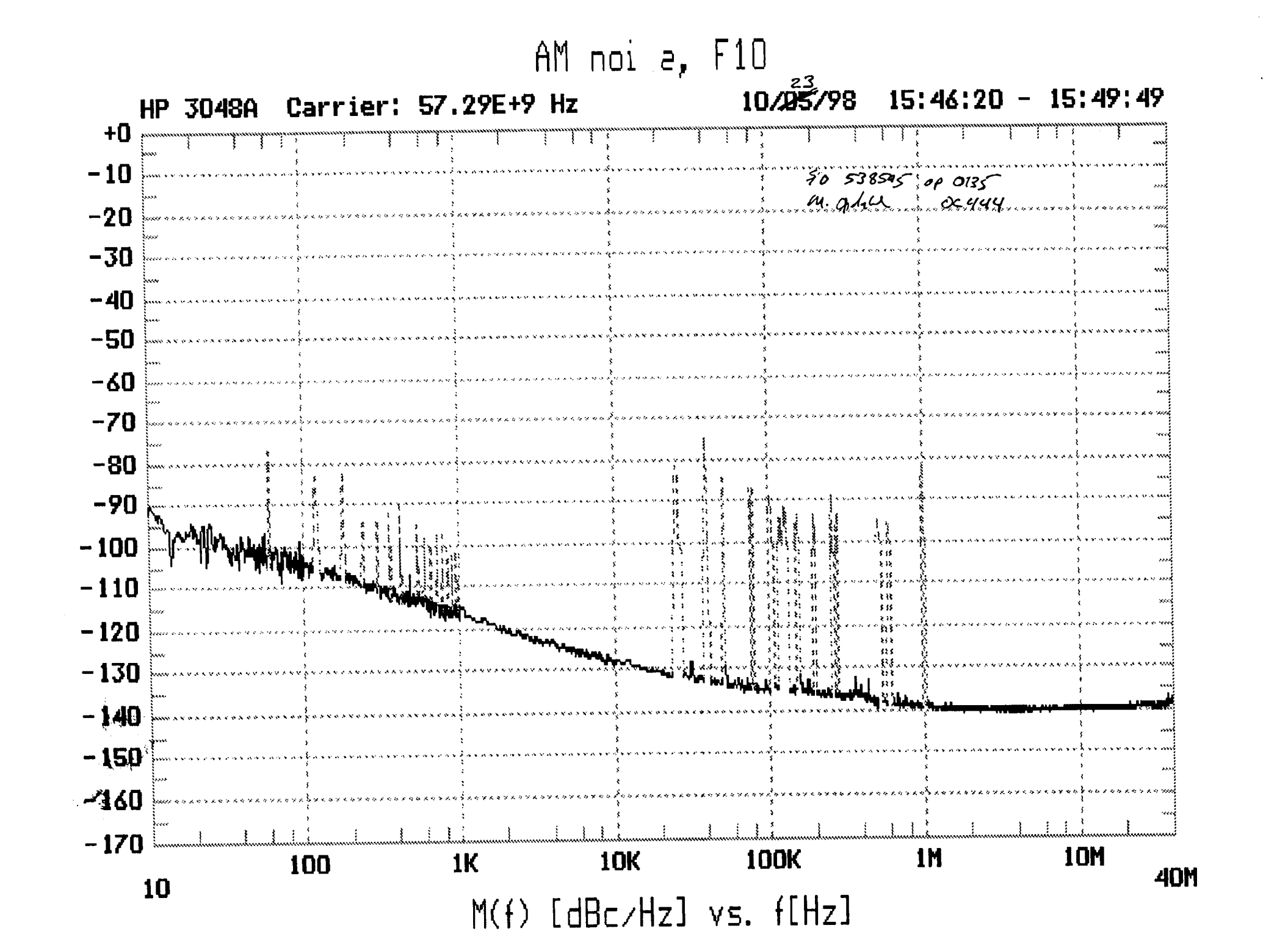


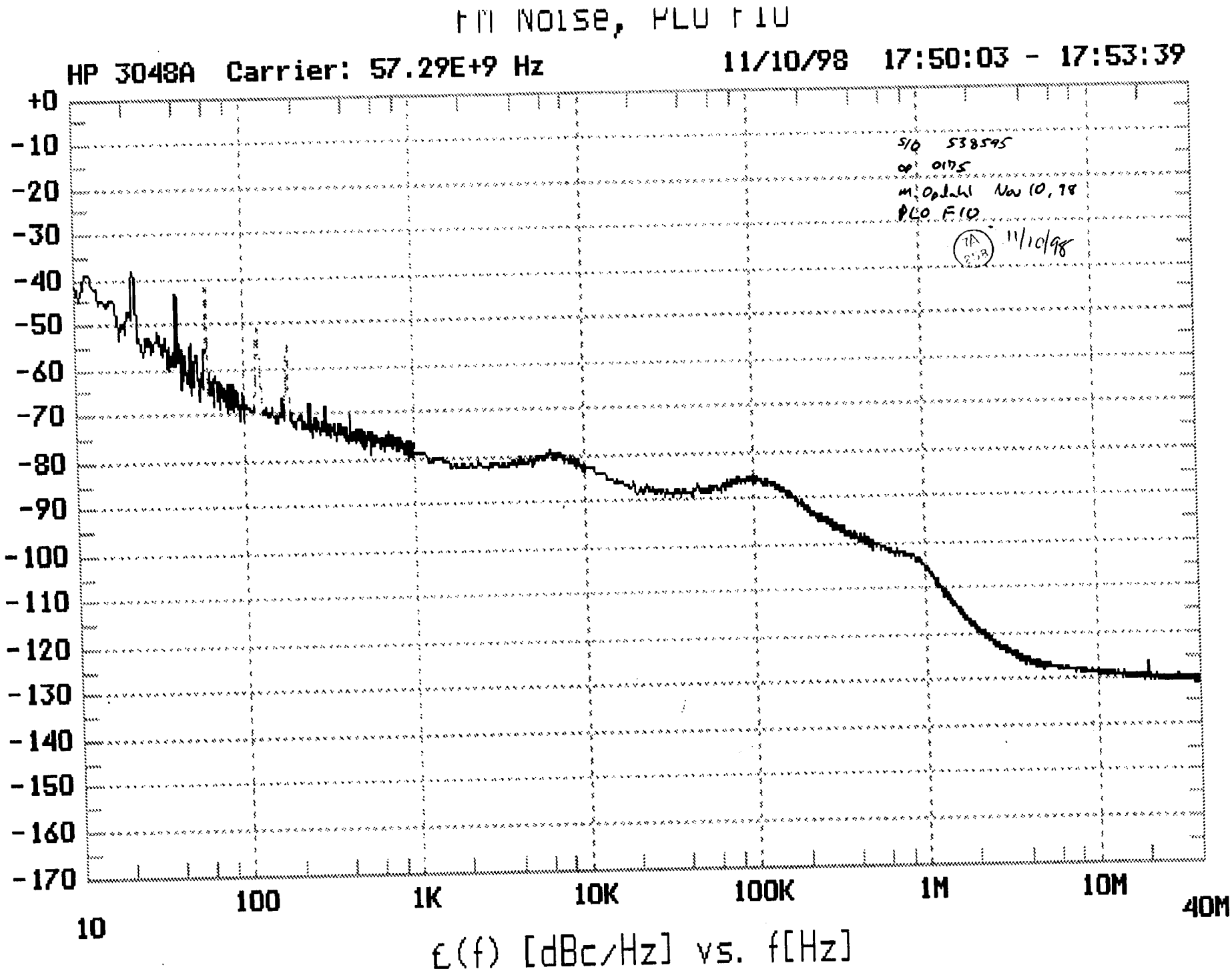

FM Noise Test, PLO F09
HP 3048A Carrier: 57.29E+9 Hz
11/17/98 16:05:40 - 16:09:15
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
£(f) [dBc/Hz] vs. f[Hz]

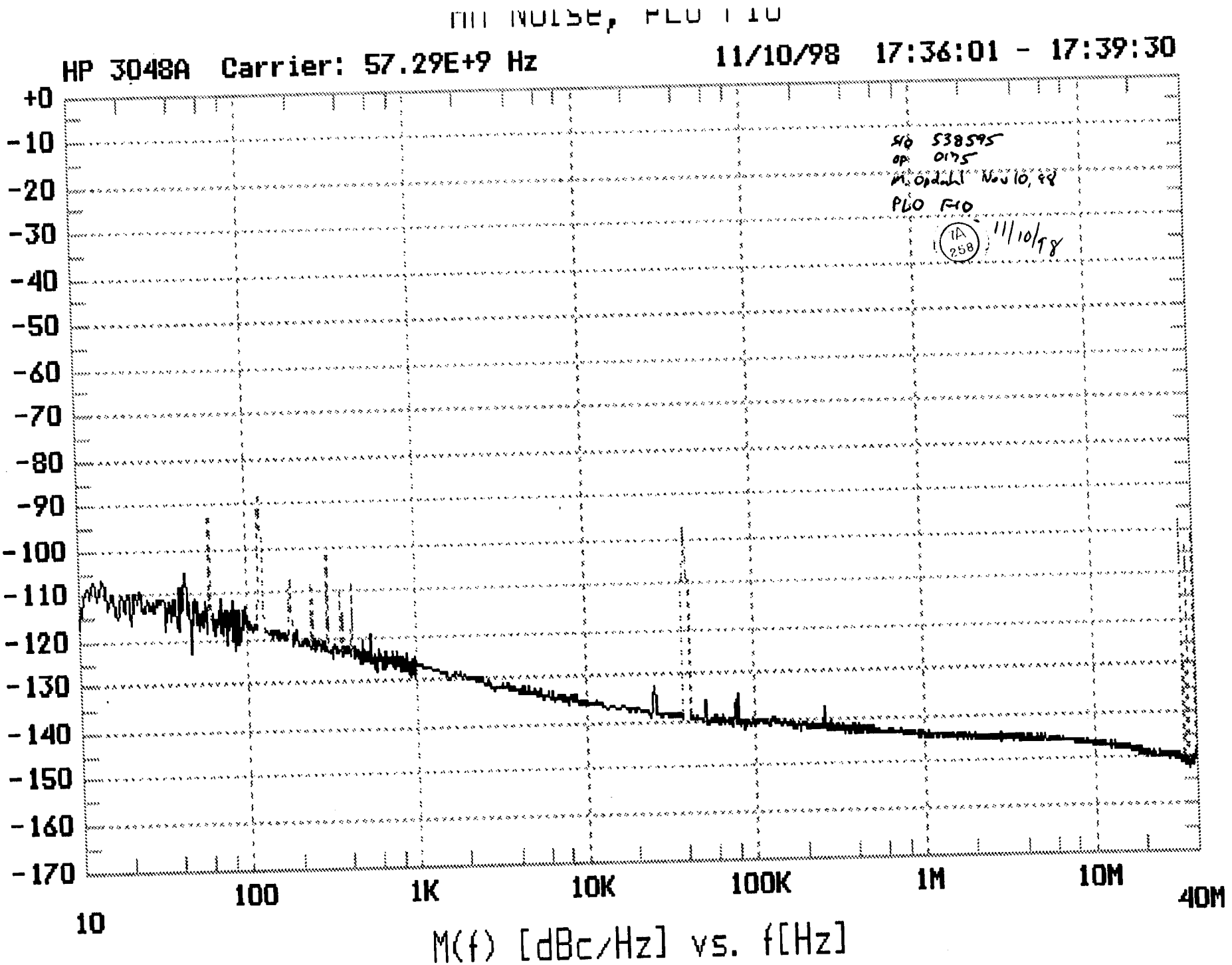
Section 6B: AM/FM - F10

The following section contains the raw data from the AM/FM Noise Tests. Requirements are that the FM Noise level be less than -100 dBc/Hz for frequencies greater than 1 MHz. Requirements are that the AM Noise level be less than 130 dBc/Hz for all frequencies greater than 1 MHz. Both Tests pass.


FM Noise, PLO F10
HP 3048A Carrier: 57.29E+9 Hz
10/23/98 15:22:26 - 15:26:01
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
£(f) [dBc/Hz] vs. f[Hz]


AM noi z, F10
HP 3048A Carrier: 57.29E+9 Hz
10/23/98 15:46:20 - 15:49:49
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
M(f) [dBc/Hz] vs. f[Hz]

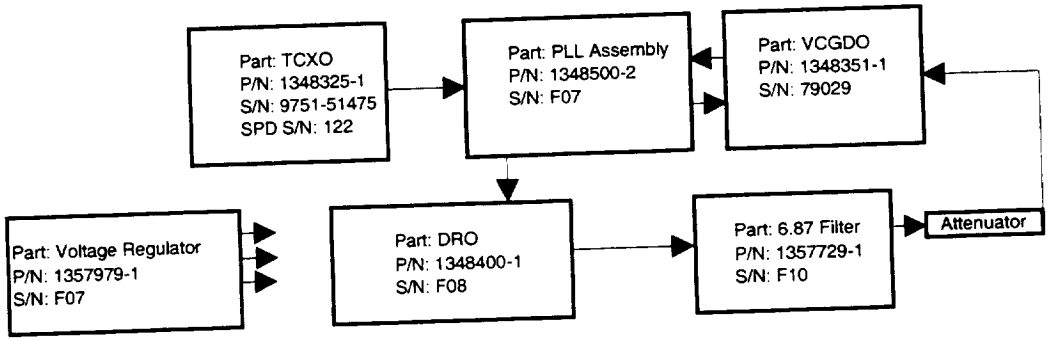

FM Noise, PLO F10
HP 3048A Carrier: 57.29E+9 Hz
11/10/98 17:50:03 - 17:53:39
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
S/O 538595
PLO F10
11/10/98
ℒ(f) [dBc/Hz] vs. f[Hz]


HP 3048A Carrier: 57.29E+9 Hz
11/10/98 17:36:01 - 17:39:30
+0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
10
100
1K
10K
100K
1M
10M
40M
M(f) [dBc/Hz] vs. f[Hz]

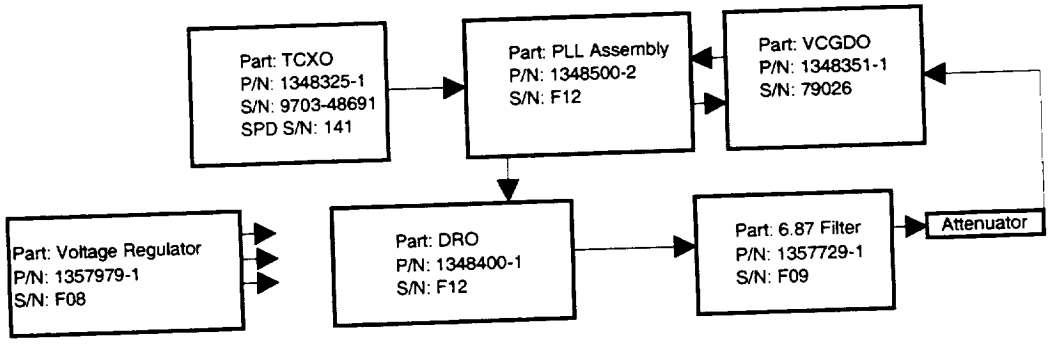
PLO As-Built Configuration

Part Name	Part Number	Serial Number	
		F09	F10
TCXO	1348325-1	51475	48691
VCGDO	1348351-1	79029	79026
PLL Assembly	1348500-2	F07	F10
DRO Assembly	1348400-1	F08	F12
Voltage Regulator	1357979-1	F07	F08

PLO F09



PLO F10



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Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
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January 1999

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7. Author(s)
D. Pines

8. Performing Organization Report No.
11384

10. Work Unit No.
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1100 W. Hollyvale
Azusa, CA 91702

11. Contract or Grant No.
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12. Sponsoring Agency Name and Address
NASA
Goddard Space Flight Center
Greenbelt, Maryland 20771

13. Type of Report and Period Covered
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14. Sponsoring Agency Code
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15. Supplementary Notes
---

16. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Report, METSAT Phase Locked Oscillator Assembly, P/N 1348360-1, S/N F09 and F10, for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

17. Key Words (Suggested by Author(s))	18. Distribution Statement
EOS Microwave System	Unclassified --- Unlimited

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Unclassified	Unclassified		---

NASA FORM 1626 OCT 86

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Block 10. Work Unit No. Provide Research and Technology Objectives and Plants (RTOP) number.

Block 11. Contract or Grant No. Provide when applicable.

Block 12. Sponsoring Agency Name and Address. National Aeronautics and Space Administration, Washington, D.C. 20546-0001. If contractor report, add NASA installation or HQ program office.

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Block 14. Sponsoring Agency Code. Leave blank.

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Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report

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NAS 5-32314

6. AUTHOR(S)
D. Pines

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Aerojet
1100 W. Hollyvale
Azusa, CA 91702

8. PERFORMING ORGANIZATION REPORT NUMBER
11384
January 1999

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14. SUBJECT TERMS
EOS
Microwave System

15. NUMBER OF PAGES

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17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	SAR

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